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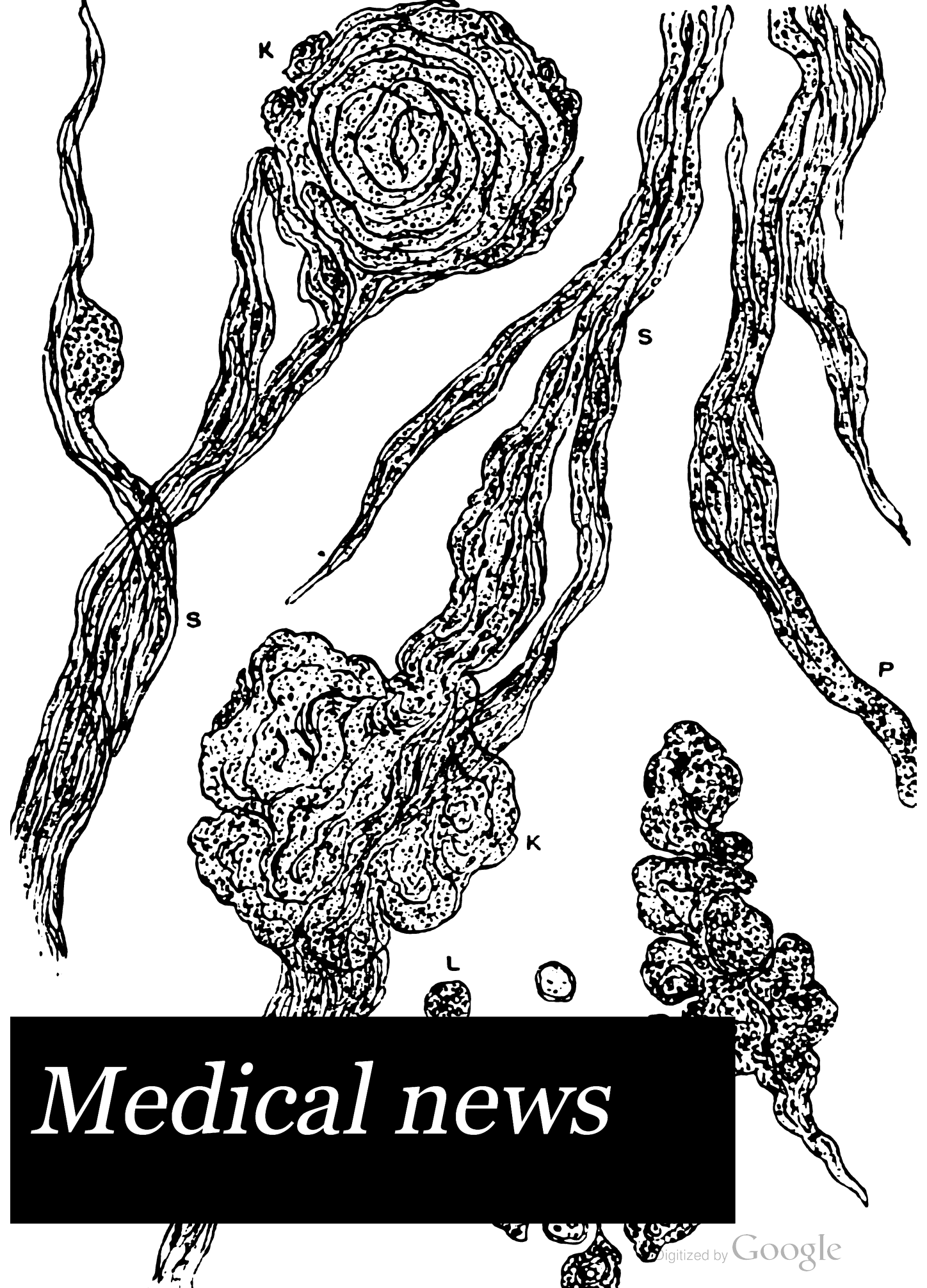

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THE

MEDICAL NEWS.

A Weekly Medical Journal.

EDITED BY

HOBART AMORY HARE, M.D.

VOLUME LVI.

JANUARY—JUNE, 1890.

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CONTRIBUTORS

TO

VOLUME FIFTY-SIX.

G. E. Abbot, Ph.D., M.D., of Bryn Mawr, Pa.
John Ashhurst, Jr., M.D., of Philadelphia.
John Aulde, M.D., of Philadelphia.
J. M. Baldy, M D., of Philadelphia.
Martin W. Barr, M.D., of Elwyn, Pa.
Daniel B. D. Beaver, M.D., of Reading, Pa.
James M. Beck, of the Philadelphia Bar.
E. Oliver Belt, M.D., of Washington, D. C.
Horatio R. Bigelow, M.D., of Boston.
John S. Billings, M.D., of Washington, D.C.
Nathan G. Bozeman, Ph.B., M.D., of New York.
Norman Bridge, A.M., M.D., of Chicago.
Daniel G. Brower, M.D., of Chicago.
Edward N. Brush, M.D., of Philadelphia.
A. H. Buckmaster, M.D., of New York.
L. Duncan Bulkley, M.D., of New York.
Samuel C. Busey, M.D., LL.D., of Washington.
J. G. Carpenter, M.D., of Standford, Ky.
W. E. Casselberry, M.D., of Chicago.
David Cerna, M.D., of Philadelphia.
Walter Chrystie, M.D., of Philadelphia.
Solomon Solis-Cohen, M.D., of Philadelphia.
J. M. DaCosta, M.D., of Philadelphia.
W. H. Daly, M.D., of Pittsburg, Pa.
Edward P. Davis, M.D., of Philadelphia.
John B. Deaver, M.D., of Philadelphia.
P. G. De Saussure, M.D., of Charleston, S. C.
Theodore Diller, M.D., of Danville, Pa.
C. L. Dodge, M.D., of Kingston, N. Y.
Norton Downs, M.D., of Philadelphia.
Frank N. Drake, M.D., of Tuscarora, Nevada.
Louis A. Duhring, M D., of Philadelphia.
Henry M. Fisher, M.D., of Philadelphia.
Austin Flint, M.D., of New York.
H. A. Foetuin, M.D., of Overisel, Mich.
M. H. Fussell, M.D., of Philadelphia.
Joseph S. Gibb, M.D., of Philadelphia.
V. P. Gibney, A.M., M.D., of New York.
S. P. Glover, M.D., of Beyrout, Syria.
Augustin H. Goelet, M.D., of New York.
William Goodell, M.D., of Philadelphia.
H. Gradle, M.D., of Chicago.
Herbert Graham, of Boston.
H. F. Hansell, M.D., of Philadelphia.
H. A. Hare, M.D., of Philadelphia.
George C. Harlan, M.D., of Philadelphia.
Henry Bixby Hemenway, M.D., of Kalamazoo, Mich.
H. M. Hiller, of Philadelphia.
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Knut Hoegh, M.D., of Minneapolis.
Joseph Hoffman, M.D., of Philadelphia.
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Woods Hutchinson, M.D., of Des Moines, Iowa.
E. Fletcher Ingals, A.M., M.D., of Chicago.
Reeves Jackson, M.D., of Chicago.
Mary Putnam Jacobi, M.D., of New York.
W. W. Johnston, M.D., of Washington, D. C.
Charles N. Dixon Jones, M.D., of Brooklyn, N. Y.
W. W. Keen, M.D., of Philadelphia.
Howard A. Kelly, M.D., of Baltimore.
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Edward Martin, M.D., of Philadelphia.
Franklin H. Martin, M.D., of Chicago.
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CHARLES MCBURNEY, M.D., of New York.
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JOHN J. REESE, M.D., of Philadelphia.
JAMES E. REEVES, M.D., of Chattanooga, Tenn.
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ROBERT REYBURN, M.D., of Washington, D. C.
HENRY J. REYNOLDS, M.D., of Chicago.
JOHN B. ROBERTS, M.D., of Philadelphia.
JOHN A. ROBISON, A.M., M.D., of Chicago.
A. D. ROCKWELL, M.D., of New York.
CARL VON RUCK, M.D., of Asheville, N. C.
B. SACHS, M.D., of New York.
J. SCHNECK, M.D., of Mt. Carmel, Ill.
W. H. SHARP, M.D., of Parkersburg, W. Va.
CASPER W. SHARPLESS, M.D., of Eugene, Oregon.
BENJAMIN T. SHIMWELL, M.D., of Philadelphia.
ALEXANDER J. C. SKENE, M.D., of Brooklyn, N. Y.
ANDREW H. SMITH, M.D., of New York.
J. LEWIS SMITH, M.D., of New York.
LAPTHORN SMITH, M.D., of Montreal, Canada.
W. T. SPEARS, M.D., of Rutledge, Georgia.
M. STAMM, M.D., of Fremont, Ohio.
M. ALLEN STARR, M.D., Ph.D., of New York.
ROBERT W. TAYLOR, M.D., of New York.
W. GILMAN THOMPSON, M.D., of New York.
J. F. TODD, M.D., of Chicago.
H. TUHOLSKE, M.D., of St. Louis, Mo.
JAMES TYSON, M.D., of Philadelphia.
ALBERT VANDER VEER, M.D., of Albany, N. Y.
W. S. VANNEMAN, M.D., of Philadelphia.
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FRANK WOODBURY, A.M., M.D., of Philadelphia.
DE FOREST WILLARD, M.D., of Philadelphia.
CUNNINGHAM WILSON, M.D., of Birmingham, Ala.
JOHN R. WINSLOW, M.D., of Baltimore.
HAL C. WYMAN, M.D., of Detroit.

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ORIGINAL LECTURES.

CARTWRIGHT LECTURES.

Delivered before the Association of the Alumni of the College of Physicians and Surgeons, New York, November 21, 1889.

BY JOHN S. BILLINGS, M.D.,
U. S. ARMY.

LECTURE III. and IV.

ON VITAL AND MEDICAL STATISTICS.

(Concluded from page 710, Dec. 28, 1889.)

SUPPOSE that, for the sake of testing the relative efficiency of two different modes of treatment, or of the general progress made during a series of years in therapeutics, we take the statistics of a particular disease—which should be one having a tolerably definite train of symptoms, so as to be easily recognized. A disease which is common to select for this purpose is acute lobar pneumonia. Suppose, now, that in a given group of cases of pneumonia, subjected to one method of treatment, the mortality or the proportion of deaths is found to be greater in another series of cases subjected to a different treatment, are we thereby authorized to conclude that that mode of treatment connected with the lowest mortality is really the cause of the low mortality? By no means. Before we can do this, we have to settle the character of the cases, the proportion of those in each group occurring in advanced age or in intemperate persons, or in those affected with other diseases, or in certain races, because all these circumstances influence the death-rate. We have also to take into account the total number of cases in each group, in order to make an allowance for the probable error due to small numbers. If the two groups of cases have occurred in different localities, or have been treated in different institutions, we have then to take into account the special influences of the locality or institution, as far as it is possible to do so, and not until all these corrections have been made can we fairly estimate the relative influence of the treatment.

I have collected the statistics of 209,755 cases of pneumonia occurring in this country and in Europe within the last fifty years, as shown by the following table, giving an average death-rate of 21.11 per cent. The distinction of sex is given in 33,904 of these cases, showing a death-rate of 19.86 per cent. in males and 24.68 per cent. in females:

Pneumonia.	Cases.	Deaths.	Percentage of Mortality.
Civil hospitals, German and Austrian	44,952	9,868	21.95
Civil hospitals, British	3,467	770	22.20
" " Canada	353	91	25.77
" " American	6,259	1,918	30.64
" " India	133	41	30.82
Total	55,164	12,688	23.00

Pneumonia.	Cases.	Deaths	Percentage of Mortality.
Military hospitals, Austrian, 1873–82	9,007	1,276	14.16
Military hospitals, U. S. Army, 1877–88	2,430	455	18.72
Military hospitals, Br. Army (Crimea, 1854–57)	590	125	21.18
Military hospitals, U. S. Army (1861–66), White troops	61,204	14,738	24.08
Military hospitals, U. S. Army (1861–66) Colored troops	16,133	5,233	32.43
Total, military hospitals	89,364	21,827	24.42
U. S. Navy, 1873–88	933	92	9.86
Br. Navy, 1872–76	1,670	194	11.49
U. S. Marine-Hospital Service, 1872–88	3,454	573	16.58
Total, Naval and Marine Service	6,057	859	14.18
Norway, 1880–85 (statistics for kingdom)	59,170	8,907	15.05
Grand total	209,755	44,281	21.11
Pneumonia Cases with Distinction of Sex.			
Civil hospitals, males	22,862	4,539	19.86
" " females	11,042	2,726	24.68
	33,904		

The distinction of deaths by ages for each sex is given in 24,557 cases, and from these data I have calculated the proportion of deaths to cases in each age-group, the result showing the immense importance of age as a factor in the death-rate from this disease.

In the absence of statistics of cases and deaths by ages, we can get very little information from statements of death-rates from pneumonia. For example, the death-rate in U. S. hospitals from pneumonia from 1877 to 1888 was 18.72 per cent. of the cases treated. Was this a high or a low death-rate? We can only say that it was probably rather below the average, since the average death-rate for males between 20 and 50 years of age is 19.9 per cent. of cases treated. The importance of such considerations is well illustrated in a paper by Dr. C. W. Townsend and A. Coolidge, contained in THE MEDICAL NEWS, July 27, 1889, p. 85.

This paper is a discussion of all the cases of acute lobar pneumonia treated at the Massachusetts General Hospital from 1822 to the present time, the figures being divided into periods of ten years, making seven decades in all.

The result would indicate a steady rise in fatality from 1822 to the present time. What are the circumstances

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which make the cases of pneumonia coming into the hospital during the last few decades more fatal than those which occurred during the first three or four decades? One of the first things investigated was the average ages of the cases of pneumonia admitted in each decade, and the results obtained showed that there was a greater number of patients over fifty years of age in the latter decades, and that the average age is steadily increasing. In like manner, the proportion of cases occurring in persons of intemperate habits, or complicated with other diseases, was examined for each decade. The influence of race was also estimated, with the result that in Americans 9 per cent., in Irish 11 per cent., and in other foreigners 14 per cent. were fatal; that was omitting all fatal cases over fifty years of age who were intemperate or complicated.

Now, if we take the mortality and make the necessary corrections for the influence of age, or proportion of intemperate and complicated cases, and set apart the influence of the causes of death which are entirely independent of treatment, we find that there is but little variation of mortality from decade to decade, and if the influence of race were brought in, we could not infer that, upon the whole, there had been any material change in the mortality of pneumonia for the last sixty-eight years, although there have been very great variations in the treatment during that time.

The conclusions arrived at by the authors are as follows:

1. In the 1000 cases of acute lobar pneumonia treated at the Massachusetts General Hospital, from 1822 to 1889, there was a mortality of 25 per cent.

2. The mortality has gradually increased from 10 per cent. in the first decade to 28 per cent. in the present decade.

3. This increase is deceptive for the following reasons, all of which were shown to be a cause of a large mortality:

(*a*) The average age of the patients has been increasing from the first to the last decade.

(*b*) The relative number of complicated and delicate cases has increased.

(*c*) The relative number of intemperate cases has increased.

(*d*) The relative number of foreigners has increased.

4. These causes are sufficient to explain the entire rise in the mortality.

5. Treatment, which was heroic before 1850, transitional between 1850 and 1860, and expectant and sustaining since 1860, has not, therefore, influenced the mortality rate.

6. Treatment has not influenced the duration of the disease or of its convalescence.

Suppose we try to estimate the relative value of a particular treatment of rheumatism, say by salicylates. We find several tables in medical literature giving the results of treatment by this and other methods. As a type, take the analysis of 1200 cases treated at Guy's Hospital, given by Hood (*British Medical Journal*, December 31, 1881, p. 1119), in which he gives the average duration of illness, number of relapses, and number of cases of cardiac complications, in 350 cases treated with salicylates, and in 350 cases treated without them, and concludes that relapses and cardiac complications were more frequent under the salicylate treatment, but that the pain ceased sooner and the average length of stay in hospital was less. But the cases are not tabulated by sex, age, race, etc., so that we can estimate the bearings of these circumstances on the results; nor in any tables are these results thus classified.

In the fourth volume of the Collective Investigation Record of the British Medical Association there is a table of 655 cases of acute rheumatism, in which the details of each case are given under twenty-seven heads. Dr. Whipham analyzes these, showing how many cases there were in each sex, how many there were in each group of ages, how many in each occupation, etc., but he does not systematically attempt to group these circumstances except as regards teetotalers, temperate and intemperate persons; in other words, he does not tabulate them as a vital statistician would do, so as to show how many of each sex in the first attack in each age-group recovered, died, had sequelæ, etc., when treated by salicylates, and how many when not treated. In attempting to treat the data by formal statistical methods, it will soon be seen that they are totally insufficient in number to give definite results. For example, in temperate males, having their first attack, and treated with salicylic acid, of 25, between five and fifteen years of age, 1 died; of 77, between fifteen and twenty-five, 1 died; of 35, between twenty-five and thirty-five, none died; and of 17, between thirty-five and forty-five, 2 died. Of the intemperate males under the same conditions—16 in all—none died. Are we to conclude that intemperate males with acute rheumatism should be treated with salicylic acid? Not at all—it would require something like 60,000 cases instead of 600 to demonstrate anything of this kind.

Evidently the statistical data which are of the most importance differ for different diseases. If, for example, we are comparing the mortality from pneumonia under different systems of treatment, it is clear that we must have the data with subdivisions by age, and the same would hold good for Bright's disease, and, in fact, for almost all diseases, if the law of decline of vital energy with advancing years holds good. But, for cancer, the data of sex and race are quite as important as those for age.

An important point in medical and vital statistics is to keep the current record, or what may be called the day-book account, entirely separate and distinct from the classification or modes of tabulation. The current record must be made complete at the time, for if any items are left out they can never be replaced. But this record once made may be used in various systems of classification and comparison for many years afterward. If an attempt be made to put this record into the form of a classified return primarily, it is certain to be defective, and will not be applicable to researches of another kind.

In the reviews of the progress of medicine, of which we already have a large supply in the shape of annual addresses and centennial literature, and to which extensive additions will, no doubt, be made at the close of the present century ten years hence, you will find more or less elaborate statements of the advances which have been made in diagnosis, pathology, preventive medicine, and surgical therapeutics in all its branches. Also, it is easy to show that we have made great advances in the

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art of relieving pain. But when we seek by statistical methods to determine what advances we have made in the prevention of death by the internal use of drugs, it must be confessed that the data are, for the most part, wanting, and that the optimist and the pessimist can propound theories and beliefs upon nearly an equal footing—that is, that of ignorance of the real facts in the case.

It is easy to see that the statistics of fevers collected in the last century, before typhus, enteric, and relapsing fevers were distinguished from each other, are of little use now, and modern bacteriology has destroyed, to a great extent, the value of the old statistics of tubercular diseases, typhoid fever, cholera, etc., and of the statistics of surgical operations. They have rendered some service in their day, but their value is now chiefly historical. There are, however, in medical literature, a very considerable number of cases which have been recorded with sufficient detail to be available for statistical treatment which they have not yet received. Death-rates in relation to the number of cases of special forms of disease showing relations of mortality to sex, age, and race are yet to be calculated, and there is material for some good and useful work in this direction.

Within the last twenty-five or fifty years in civilized communities the gross mortality has diminished—there has been a prolongation in the average expectation of life: but how much of this is due to preventive medicine, how much to improved conditions of habitation and to the lowering of the price of food, and how much to improved methods of treatment? Dr. Sweifel endeavored to answer this question in a lecture on the influence of medical knowledge on the life of the people, delivered in Leipzig in 1887 ("Der Einfluss der ärtzlichen Thätigkeit auf die Bevolkerungsbewegung").

Taking as a basis for his calculations the figures of Bavaria for ten years, and those of Saxony for thirteen years, he found that for 100,000 of living population the average number of deaths from tuberculosis increased from 250 to 258, from inflammation of the lungs from 222 to 270, from croup and diphtheria from 98 to 123. He remarks that these are saddening figures; in spite of the sanitarians and health resorts, in spite of ventilation, new methods of treatment by inhalation, compressed air, etc., the number of men who die from diseases of the respiratory organs is steadily increasing, and he queries whether Süssmilch was not right in his phrase "Göttlichen Absterbeordnung"—divine law of death.

On the other hand, he shows that the mortality from typhus has fallen from 62 to 34. But the question is, whether this is due to diminished prevalence of the disease, or to a diminished mortality in the same number of cases of the disease due to the improved medical treatment. It may be noted in this connection that the chief effect of improved sanitation appears in the lessened mortality in children under five years of age, and that it is chiefly in the mortality occurring after these ages that we are to look for the influence of improved medical treatment. In examining this, however, it is to be remembered that improved sanitary conditions affecting chiefly infants, by preserving a number of feeble and sickly children tend to produce a higher rate of mortality in succeeding years. In cases admitting of surgical treatment, and in childbirth, there can be no doubt as to the diminished mortality in the practice of those who use the best accepted modern methods; but these methods are not yet used scientifically by half of the profession, and the results are not perceptible in the general death-rates thus far collected.

It must be admitted that the greater part of the increased expectation of life is probably due to better food, purer water, greater cleanliness, and improved methods of preventing the spread of contagious diseases. If we look at the curves representing the loss of life in large masses of people at different times and places, we see that the laws of life and death have but a narrow range of variation after the age of infancy has passed, and that improvements in therapeutics have lifted the lines but very little. They have lessened suffering greatly, but they have not greatly deferred death.

In our present state of knowledge there are certain forms of disease and derangement of organs whose tendency is to recover without any treatment, or in spite of bad treatment. There are also certain diseases and derangements which are incapable of cure by any known method of treatment. Otherwise, man would not be mortal. Between these two classes is a small number of cases of disease, the result of which depends on the treatment. In order that medical statistics may give us any information in regard to this last class we must have some idea as to the proportion of each of the two other classes.

A very good illustration of some of the ways in which lies can be told with statistics may be found in the various books and papers which have been produced in connection with the anti-vaccination controversy.

In order to understand the relations between vaccination and smallpox, it is necessary to have the death-rates from smallpox given for different periods of life—that is, by age. In this country and in Great Britain we have no data as to the deaths by smallpox by different ages prior to the introduction of vaccination, because the registration of deaths by ages has only been carried on for a little over fifty years. We can, however, for Great Britain, compare the statistics of vaccination for three different periods—the first from 1847 to 1853, in which gratuitous vaccination was provided for the people, but it was purely an optional matter with some whether they should make use of it or not; from 1854 to 1871 vaccination was obligatory by law, but this was mainly theoretical, since the law was practically not enforced; from 1872 to 1880, when the vaccination was rigidly enforced.

Before the introduction of vaccination there were but few persons who did not have the disease at some time in their lives. It appeared in epidemic waves over Europe, usually at intervals of from five to seven years, being about the time required to accumulate, by births, a sufficient amount of susceptible persons to enable an epidemic to make headway. Of course, then, the great majority of persons had the disease in infancy, or in early childhood, and a large proportion of these died. So that in those days the smallpox mortality in the early years of life was high, while those who survived were either protected from future attacks or presented a certain amount of immunity to the poison of the disease, so that the smallpox death-rate of the higher ages was then low. When vaccination came to be general, the young were protected, but were not protected as permanently and completely as would have been effected by an at-

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tack of smallpox. The result of this was that the death-rate from smallpox under five years of age fell 80 per cent., while from five to ten years of age it fell 45 per cent., and in the older ages it may even have increased where re-vaccination was not systematically and thoroughly carried out. Taking the English records for 1872 to 1874 and 1877 to 1880, it is found that the proportion of deaths under and over fifteen years of age, per thousand deaths from smallpox, differs according to whether the persons were vaccinated or unvaccinated, as follows: Of 1000 unvaccinated persons dying from smallpox, 672 were under fifteen years of age and 328 over fifteen. Of 1000 vaccinated persons dying from smallpox, 334 were under fifteen and 666 over fifteen, the proportion being, as will be seen, almost precisely reversed under the two conditions.

Whether the data be taken from a State, a large city, or a small town, the results are the same. Take, for example, the records of the town of Kilmarnock, in Scotland. For thirty-six years, from 1728 to 1764, this place had an average population of 4200, and a very accurate register of the births and deaths was kept. During these thirty-six years there were nine epidemics of smallpox, succeeding each other at regular intervals of about four years, just the time required to raise a fresh crop of unprotected victims sufficiently numerous to spread the contagion. Of every 1000 deaths during these thirty-six years, 161 were due to smallpox; in the twenty-six years ending 1879, only 9.9 per 1000 were due to it, or one-sixteenth of the old proportion. In the old days one epidemic left very few unmarked victims for the next one. Those who recovered were pitted for life, and there were very few, except young children, who were unscarred.

By the modern English life-table, of every 1000 children born alive, 2.3 may be expected to die of smallpox before reaching five years of age. In the old of Kilmarnock the proportion was 116 to every 1000.

The statistical mill grinds what is put into it; it enables you to compare the results of different aggregations of circumstances selected by yourself; but it neither guides your selection nor enables you to reason properly on the results. If you compare the death-rate per 1000 of living population in an epidemic of smallpox occurring in a city in the United States in recent times with that of an epidemic occurring in a city in the last century, you will probably find that the death-rate was greater in the modern city than in the ancient one. Perhaps two-thirds of the people in the modern city were properly vaccinated—in the ancient city none were vaccinated. Are we to conclude that partial vaccination increases the death-rate from smallpox? Yes, for a single epidemic year; but if you take a period of twenty years or more for your comparison, you will find the death-rate much lower in the vaccination than in the ante-vaccination period. Why is this? Because in the ante-vaccination period the adults had been through several epidemics of smallpox and had either had the disease and survived, or had proved insusceptible to the virus—being, in either case, protected. The only class of the population in much danger from smallpox in those days were the young children born since the last epidemic, less than ten years ago. But in the modern community, partially protected by vaccination, there has accumulated a considerable number of unprotected adults during the long periods which now elapse without an outbreak, and these increase the fuel for flame, and consequently the death-rate. Comparisons of smallpox statistics for single years are therefore almost worthless.

The results of vaccination may be indicated in another way. At the commencement of its organization in 1761, the Equitable Society for Insurance of Lives, the oldest and most important of life insurance companies, charged 12½ per cent. extra for all persons who had not had the smallpox. In 1781 this was reduced to 11 per cent. extra.

In 1802 it was resolved "that the directors be empowered to grant policies of assurance upon the same terms to persons who aver in their declaration that they have had the cowpox, as to those who aver in their declaration that they have had the smallpox. But if such person shall die afterward of the *smallpox*, then such policy shall be void." In 1823 the words: "But if such person shall die afterward of the smallpox, then such policy shall be void" were stricken out.

In vital statistics, as in other branches of social science, it is not true that the effects of causes acting in combination are equal to the sum of the effects of each of the causes acting separately. Different causes of death having no relation to each other do not have a joint effect which is equal to the sum of the effects of each cause taken separately, and it is, therefore, difficult to bring the phenomena of vital statistics within the boundaries of mathematical formulæ. In the doctrine of this kind of averages time and number are not convertible terms.

Statistics apply to masses of men, to communities, not individuals. We find a mass of matter moving in a certain direction with a certain velocity and endeavor to calculate the direction and amount of the forces which have produced this result. In like manner we may consider the tendency to death in a community as a resultant of several forces and endeavor to estimate the influence of each of these forces in producing the result.

In studying medical and vital statistics one is somewhat in the position of a man on the deck of a large Atlantic steamer, out of sight of land and gazing on the troubled ocean. He sees many waves, large and small, apparently moving in very different directions, and it is not until he has, by careful examination and repeated comparison, learned to distinguish the ripples due to the wind now blowing, the larger cross seas resulting from forces which were acting a few hours before, and the long rolling swells which indicate to some extent the direction and force of the tempest of yesterday, that he can begin to understand the roll of the ship on which he stands; while to appreciate the force and direction of the great current which is sweeping with it all the troubled water and the ship itself, requires skilled observation with special instruments, and the use of charts which embody the experience of hundreds of voyages. So, also, in viewing the records of human life, diseases and death, the variations which are at first most perceptible are often those which are most superficial and which give little or no indication of the magnitude and direction of the movement of the great masses beneath.

The most valuable sources for data relating to vital statistics, and, in many respects, to medical statistics

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also, are those contained in the Reports of the Registrar-General of England for the last forty years, and especially in the supplements which have been issued every ten years during that period. Next to these, for matters relating to this country, come the statistics of the State of Massachusetts for the last forty years, the statistics of New Jersey for the last ten years, the Mortality and Vital Statistics of the Tenth Census, and the statistics of Boston, Philadelphia, New York City, and of the District of Columbia. Especially valuable, also, are the vital statistics of Sweden, of Belgium, of Italy as published for the last six or seven years, of Norway, of Switzerland, of Prussia, and of many of the large cities of Western Europe.

The following works will, also, be found useful for reference:

Süssmilch, J. P.: Die Gottliche Ordnung in den veranderungen des menschlichen Geschlechts, aus der Geburt, dem Tode und der Fortpflanzung desselben erweisen. 2 Thiele. Vierte verbesserte Ausgabe, genan durchgesehen und näher berichtiget, von Christian Jacob Baumann. 8vo., Berlin, 1775.

Niles, N., Jr., and *Russ, J. D.:* Medical Statistics, or a comparative view of the mortality in New York, Philadelphia, Baltimore, and Boston, for a series of years; including comparisons of the mortality of the whites and blacks in the two former cities; and of whites, free blacks, and slaves in Baltimore. 8vo., New York, 1827.

Neison, F. G. P.: Contributions to Vital Statistics, being a development of the rate of mortality and the laws of sickness, from original and extensive data; with an inquiry into the influence of locality, occupations, and habits of life on health; an analytical view of railway accidents; and an investigation into the progress of crime in England and Wales. 3d ed., 4to., London, 1857.

D'Espine, M.: Essai analytique et critique de Statistique mortuaire comparée renfermant les monographies étiologiques des accidents et de la plupart des maladies mortelles, et expliquant les lois generale de la mortalité des peuples par les influences combinées des diverses causes de mort. 8vo., Genève, 1858.

104,440—*Ansell, C., Jr.:* On the rate of mortality at early periods of life, the age at marriage, the number of children at a marriage, the length of a generation, and other statistics of families in the upper and professional classes. 8vo., London, 1874.

Bertillon: La Demographie figurée de la France, ou étude statistique de la population Francaise, avec tableaux graphiques traduisant les principales conclusions. Mortalité selon l'age, le sexe, l'état-civil, etc., en chaque département et pour la France entière, comparée aux pays étrangers. Folio, Paris, 1874.

Ollendorff, A.: Die periodischen Sterblickeits-Schwankungen in ihrer Bedeutung für die medicin. Arch. f. path. Anat., etc., Berl., 1886, cv. 110–128, 1 pl.

Bertillon, Jacques: Article "Demographie" in Encyclopédie d'Hygiène et de Médecine publique. Paris, 1889, 8vo, tome i. p. 112.

In addition to the Census and registration records, we have another important source of information in vital statistics, namely, the records of life and health insurance companies. These are not as well known to physicians generally as they should be, and I wish, therefore, to call special attention to the two most valuable compilations of them now in existence, namely, the *Insurance Cyclopædia*, commenced by Cornelius Walford, of which five volumes have now been published; and the *System and Tables of Life Insurance based on the Experience of Thirty American Life Offices*, by Levi W. Meesh, published in 1881.

ORIGINAL ARTICLES.

REPORT OF GYNECOLOGICAL WORK, WITH ESPECIAL REFERENCE TO METHODS.[1]

BY R. B. MAURY, M. D.,
OF MEMPHIS, TENN.

THE paper which is here offered presents a brief summary of the more important portion of my operative work during the past year.

In connection with this report some comments are made upon the methods employed, because it is evident that further progress and increased success must depend largely upon the perfection attained in our methods of operating.

With four exceptions all of the operations have been done in a private hospital, built especially for the purpose, and under my own control.

The summary embraces:

21 laparotomies for the removal of ovarian tumors, or of the uterine appendages, or for the relief of obscure disease within the abdomen.

2 laparotomies for ectopic gestation.

28 operations for laceration of the cervix.

14 perineal and vaginal prolapse operations.

5 rectoplasties.

4 anterior colporrhaphies.

The accompanying table presents a synoptical report of the abdominal operations.

Upon many of these cases no comment is necessary; with reference to the others I may properly make some remarks.

It will be observed that out of the twenty-one operations there were two deaths. One of these might be termed accidental; the other was certainly unavoidable.

The one referred to as an accidental death (No. 15) was a case of chronic ovaritis with hyperplasia, and also with extensive cystic degeneration. According to her physician, fearful hemorrhages had repeatedly left her pulseless for many hours. The removal was easy. After the abdominal sutures were introduced some bleeding was discovered, which did not cease upon sponge-packing of the pelvis, or afterward from irrigation with hot water. After examination of the pedicle ligatures, and finding that they were properly tied, a glass drainage-tube was inserted, and the wound closed. A nurse emptied the tube by suction at short intervals.

The patient appearing to be in good condition, I left her for urgent reasons, and on returning in forty-five minutes, I found her pulseless and unconscious.

[1] Read before the Southern Surgical and Gynecological Association, in Nashville, Tenn., Nov. 12, 1883.

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LAPAROTOMIES FOR REMOVAL OF OVARIAN TUMORS, DISEASED APPENDAGES, AND FOR OTHER CAUSES.

No	Name.	Age.	Married or single.	Pathological condition or symptoms.	Operation.	Adhesions.	Drainage.	Hospital or private.	Recovery or death.	Effect of operation.	Remarks.
1	Mrs. L.	53	M.	Papilloma of pelvic peritoneum causing ascites.	Exploration of growth and removal of ascitic fluid.	...	No	H.	R.	Negative.	Returned home and lived one month. The papilloma sprang from the right side of the pelvis; though there were masses on the ovary it did not originate therefrom. Removal was impossible.
2	Miss B.	21	S.	Multilocular ovarian cystoma, weight 40 pounds.	Removal of tumor; remaining ovary healthy.	Yes	No	H.	R.	Complete restoration to health.	Was very feeble and anæmic before operation.
3	Mrs. B.	40	M.	Cancer of small intestine, adherent in Douglas's pouch, causing complete intestinal obstruction.	Exploration and unfolding of intestinal coils.	Yes	No	H.	R.	Clearly to prolong life seven or eight weeks.	History of chronic intestinal obstruction, with acute symptoms of complete obstruction for six days.
4	Miss T.	23	S.	Chronic ovaritis causing complete invalidism.	Removal of uterine appendages	Yes	No	H.	R.	Complete and rapid restoration of flesh and health.	Before the operation she was a mental and physical wreck.
5	Mrs. D.	46	M.	Ovarian monocysts.	Removal of tumor; remaining ovary healthy.	No	No	H.	R.	Complete restoration to health.	
6	Mrs. S.	33	M.	Intra-ligamentous cysts with universal adhesions; a very large tumor.	Removal of cyst after 30 minutes work considered impossible; sac cleansed and drained.	Yes	Yes	H.	R.	Ten months after operation is in very fair health; small fistula 2½ inches deep remains; discharge from fistula small	Six months prior to operation had a long fever, supposed to be typhoid. At time of operation was bed-ridden, and so feeble that she would have died on the table under a prolonged operation. Intestinal adhesions were extensive and firmly organized.
7	Mrs. P.	41	M.	Chronic ovaritis with strong adhesions.	Removal of appendages.	Yes	No	H.	R.	Was bedridden at time of operation, but two months afterward was greatly improved in health.	
8	Miss M'C	19	S.	Ovarian cystoma of grotesque shape filled with gelatinous fluid which would not flow through trocar.	Removal of tumor; remaining ovary healthy	Yes	Yes	H.	R.	Restoration to health slow but complete.	Patient was anæmic and very feeble; tumor weighed 30 lbs.; from character of its contents and firmly organized adhesions requiring ligatures, long incision was made. She had cough for several months after operation, and recovery was slow.
9	Mrs. C.	27	M.	Fever of hectic type for six months following parturition; tumor in left side of abdomen; symptoms supposed due to abscess.	Abdominal section; no abscess found; tumor was a mass of intestinal coils so firmly united as to be inseparable	Yes	No	H.	R.	Gradual improvement in every respect.	Six months afterward her husband wrote that the only remaining trouble was with the bladder.
10	Mrs. B.	24	M.	Chronic ovaritis.	Removal of appendages.	Yes	No	H.	R.	Restoration to health.	Had long been a confirmed invalid; suffered constant pain, and was bed-ridden.
11	Mrs. N.	25	M.	Cystic degeneration of ovaries, with prolonged hemorrhages.	Removal of appendages.	No	No	H.	R.	Restoration to health.	Ovaries were converted into cysts, and scarcely any stroma was left. The results of operation were brilliant.
12	Mrs. J.	38	M.	Large ovarian cystoma; mostly solid, requiring long incision for removal.	Removal of tumor and of other ovary, which was also much diseased.	Yes	Yes	H.	R.	Restoration to health.	Condition was so bad on admission that temporary relief was attempted by aspiration, but only one cyst could be evacuated, and operation was done next day under unfavorable circumstances.
13	Mrs. R.	36	M.	Thin walled ovarian cystoma of grotesque shape; colloid contents.	Removal of tumor and of other ovary, which was also much diseased.	Yes	Yes	H.	R.	Restoration to health.	Tumor had to be shoved through a long incision; cyst was torn in many places, and colloid contents escaped freely into peritoneum.

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No	Name.	Age.	Married or single.	Pathological condition or symptoms.	Operation.	Adhesions.	Drainage.	Hospital or private	Recovery or death.	Effect of operation.	Remarks.
14	Mrs. K.	41	M.	Cystic degeneration of ovaries with severe and prolonged hemorrhages.	Removal of appendages.	No	No	H.	R.	Restoration to health.	Results of operation were brilliant.
15	Mrs. E.	27	M.	Cystic degeneration of ovaries: severe hemorrhages.	Removal of appendages.	No	Yes	H.	D.	Severe hemorrhage, source of which could not be found; death from peritonitis on fourth day.	Abdomen was reopened one hour after operation; patient pulseless and unconscious. Persulphate of iron injected through drainage tube stopped hemorrhage.
16	Mrs. B.	37	M.	Chronic pelvic peritonitis; pelvic organs so matted together they could not be identified.	Removal of right ovary, which was literally dug out.	Yes	No	H.	R.	Complete relief of all the symptoms; too short a time since operation to say more.	After one hour of hard work the right ovary was enucleated from its bed; left tube and ovary could not be identified; normal and painless menstruation three weeks after. Patient went home apparently in perfect health.
17	Mrs. T.	34	M.	Urachal fistula with umbilical hernia; the fistula which opened at navel was 7¼ inches deep.	Division of abdominal wall into the fistula as far as pubes; accidental opening of hernial sac.	...	...	H.	R.	Closure of fistula to a great extent; six months afterward a small sinus left which requires washing once in forty-eight hours.	A hernial sac protruded at the navel, and below it on each side of the fistula, in horseshoe shape. This was opened accidentally, first on one side and then on the other, and great care was required to close these openings to prevent the stinking discharge entering the peritoneum.
18	Mrs. L.	42	M.	Pelvic abscess.	Section and drainage of abscess through the abdominal wound.	...	Yes	H.	R.	Abdomin'l wound healed throughout, full results cannot yet be ascertained since operation was done Oct. 11.	Beneficial results already obtained are, relief from pain caused by abscess in left tube, and removal of obstruction to the rectum, which had almost prevented fecal discharges.
19	Mrs. B.	36	M.	Multilocular thin-walled ovarian cyst with colloid contents and universal adhesions.	Removal of tumor.	Yes	Yes	H.	D.	.....	This was a forlorn hope. Fever for two months; daily vomiting, and bronchitis produced profound anæmia. Patient never reacted well, and died twenty-four hours after operation.
20	Mrs. F.	28	M.	Chronic ovaritis with well-marked salpingitis.	Removal of appendages.	Yes	No	H.	R.	Relief of all symptoms on leaving the hospital; and will probably be completely restored to health.	Had been a great sufferer from constant pain; was bedridden and habituated to the use of opium. She had entirely lost her desire for opium before going home.
21	Mrs. H.	41	M.	Chronic ovaritis; ovaries cirrhosed.	Removal of appendages.	No	No	H.	R.	Two weeks after operation had uninterrupted convalescence.	Operation done ten days before the time for a menstrual period. A Graafian follicle had just burst on the surface of left ovary. The tubes were excessively hyperæmic.

LAPAROTOMIES FOR ECTOPIC GESTATION.

No.	Name.	Age.	Married or single.	Pathological condition or symptoms.	Operation.	Adhesions.	Drainage.	Hospital or private.	Recovery or death	Effect of operation.	Remarks.
1	Mrs. L.	30	M.	Ruptured tubal pregnancy at tenth week.	Removed fœtus and placenta, and tied the tube.	Yes	Yes	P.	D.	Died on third day.	Difficulty of diagnosis, and causes mentioned elsewhere, were the reasons of fatal delay.
2	Mrs. K.	30	M.	Tubal pregnancy at fourth month with extra-peritoneal rupture.	Removed fœtus and drained sac.	Yes	Yes	P.	D.	Death from exhaustion.	

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The wound was at once reopened, the cavity washed out with hot water, and search again made for the bleeding point, but without success. The drainage-tube was replaced, and the wound again closed.

As the hemorrhage continued, one drachm of liquor ferri tersulphatis was injected through the tube. This at once stopped the bleeding. Reaction with a temperature of 105° F. ensued, and she died on the fourth day from peritonitis. No autopsy was obtained.

I can only speculate in regard to the cause of the hemorrhage; perhaps it was from a torn vein, for the veins in the removed portion of the broad ligament were much dilated.

This case opens the question of the best mode of controlling hemorrhage in a deep cavity like the pelvis, where we cannot see the bleeding point.

I relied on the hemostatic powers of the drainage-tube, but was disappointed. The iron stopped the hemorrhage, but formed a firm plug around the tube, which fixed it firmly in the pelvis. It was removed after forty-eight hours with great difficulty. In a similar case I would be disposed to pack the pelvis around the drainage-tube with iodoform gauze. I have seen Professor Leopold, of Dresden, use gauze alone as a hemostatic, bringing one end out of the lower end of the incision. He removes it in forty-eight hours.

This case, together with Nos. 11 and 14, formed the subject of my paper on the "Clinical History of Cystic Degeneration."[1]

The characteristic features of this form of disease, as illustrated by these cases, are profuse and constant leucorrhœa, persistent intractable metrorrhagia, and ovarian pain. The ovaries were almost complete cysts; the stroma was nearly destroyed; and, though menstruation persisted with great regularity, the microscopist could find no evidences of ovulation in the diseased organs.

As there was no tubal disease, and presumably from the subsequent history of Cases 11 and 14, no disease of the endometrium, the conclusion was unavoidable that the severe hemorrhages were the result of cystic degeneration.

The case referred to as one of unavoidable death was No. 19. This was a multilocular, thin-walled ovarian cyst, with colloid contents, and universal adhesions, in an anæmic woman, who was sent to me in desperate circumstances, after all attempts to rally her had failed. She was exhausted by a fever of two months' continuance; by daily vomiting and inability to take food; and, lastly, by an attack of bronchitis, which resulted from exposure at night while waiting four hours for a delayed train.

The operation was done after the bronchitis was relieved. The cysts which formed the tumor were numerous and small; the walls were fragile, and tore when caught by the forceps; the contents would not flow through the large trocar, and a portion escaped into the abdomen. The adhesions were universal and strong. On the posterior surface of the tumor the small intestine was extensively attached, and upon eight inches of its length it was necessary to leave the outer layer of the cyst wall. The pedicle was tied early in the operation, and subsequently the upper portion of the cyst was removed. This was necessary to get at the intestinal adhesions.

After an hour's work I had the satisfaction of closing a dry and clean peritoneum—but the shock was too great for so feeble a patient. She never fully reacted, and died the next day.

In Case 3 the operation was done for relief of acute symptoms which supervened in the course of chronic intestinal obstruction. For six days neither flatus nor feces had passed. There were pain and constant vomiting. A small nodulated tumor was felt behind the uterus. This was supposed to be a cancerous ovary.

On making the section, it was found that the uterus, ovaries, and tubes were healthy. The tumor was a cancerous growth involving a coil of small intestine and fixing it firmly in Douglas's pouch. Cancerous nodules were found in its mesentery, upon the adjacent omentum, and on the neighboring intestinal coils.

After untwisting the coils and separating a few adhesions, the wound was closed with the expectation that the patient would die in a day or two. But during the night the vomiting ceased, and the next day she began to take food. On the third day there was a natural fecal evacuation, which was repeated at intervals of three or four days.

She went home on the fifteenth day, and lived one month.

Nos. 16 and 18 may be classed among the most difficult of pelvic operations. In the former, after an hour's work the right ovary was dug out of its bed of old adhesions. The vermiform appendix was firmly fixed close to it, but the Fallopian tube could not be made out. On the left side, neither tube nor ovary could be discovered, the tissues being fused together and contracted by inflammation.

In the latter case there had been a history of disease for fourteen years, following parturition. For eight or nine years she had been a great sufferer from pain in the left hip, associated with an exudation fixing the womb in a position of retro-version.

In September she came under my care with a tumor in the left hypogastric region. The pelvic exudation, felt through the vagina, was of stony hardness: a firm ring was formed around the

[1] Transactions of American Gynecological Society, 1889.

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rectum which prevented the passage of the index finger, and seriously obstructed defecation.

On making the section, the abdominal wall was found nearly three inches thick, and on the left side very unyielding and resistant from inflammatory thickening of the peritoneum. The omentum was adherent to the pelvic brim, and strong adhesions were broken before the tumor was reached.

After a determined effort of three-quarters of an hour, the tumor was, to a great extent, separated from its posterior attachments, but a cartilaginous button remained, connecting it with the rectum. I could do nothing toward separating the anterior attachments of the tumor. If this had been possible, I would have separated the rectal attachment with scissors, and controlled hemorrhage by the pedicle ligature.

Under these circumstances the sac was aspirated, and nearly two ounces of pus removed. The opening was then enlarged, and the sac and pelvis thoroughly irrigated by means of the siphon-trocar. Two drainage tubes were then inserted, one into the pus sac, the other into the pelvis. The pus sac could not be attached to the abdominal incision. Both drainage-tube openings were closed by the end of the second week.

This method of drainage I had made use of in a previous case under similar circumstances with satisfactory results.

Much uncertainty, however, surrounds the future of both these cases, as it does that of all incomplete operations.

The methods which I have followed with scrupulous care are those which have been developed by the labors of Sir Spencer Wells and his able successors in the Samaritan Hospital, and by Dr. Keith, who worked contemporaneously with him; and, lastly, by Mr. Lawson Tait, who may be said to have well-nigh solved all the problems involved in the successful treatment of inflammatory disease of the uterine appendages, and in the management of ectopic gestation.

These methods may be summarized as follows:

1. An aseptic field of operation, and an aseptic surgeon.

2. A small incision—in the case of inflammatory disease in the pelvis, just large enough to introduce, and work with, two fingers.

3. Aseptic silk ligatures, as fine as is consistent with safety in tying.

4. Enucleation of diseased structures, in spite of firm adhesions or even profuse hemorrhage.

5. Irrigation by means of the siphon-trocar as a substitute in most cases for sponging; using simple hot water for this purpose, and excluding all antiseptics.

6. Drainage often, and whenever one is in doubt as to its necessity.

7. Careful replacement, by spreading out, of the omentum, before proceeding to close the wound.

8. Inclusion of all the structures in passing the abdominal wall sutures; and placing the deep sutures one-half an inch apart.

9. The use of means for moving the bowels on the second or third day, after removing the appendages; and the avoidance, if possible, of opium.

Out of forty-three patients surviving abdominal operations from a few months to several years, I know of but one who has a hernia. This was the result of leaving off her bandage during an attack of dysentery, which occurred two months after a section one inch and a half in length, for an intraperitoneal hæmatocele.

My cases have all been in private practice. I have heard from most of them repeatedly after operation, and I think if hernia had occurred I would know it.

I have had one tube-sinus which still continues to discharge at times, although one of the pedicle-ligatures was cast out sixteen months after the operation.

I will now consider the cases of ectopic gestation.

The first case was under the care of Dr. W. W. Taylor, who, suspecting ectopic gestation, requested me to see her with him on Feb. 17th. Her history is as follows:

Jewess, aged thirty years, of stout build, who had one child seven years ago. No conception since.

Her health was good and menstruation normal to Dec. 20, 1888, when the menstrual period continued five days.

Six weeks later a slight bloody discharge appeared, accompanied by pain in the hypogastrium and right iliac region. The pain was not continuous: the bloody discharge was a mere stain.

She suffered from nausea, and thought she was pregnant.

An examination showed the uterus to be somewhat enlarged, but in its normal position. Its mobility was impaired and there was decided peri-uterine tenderness, but no pelvic tumor could be found. The pulse was 100; temperature 99½°. The patient did not appear to be very ill, and the symptoms, I thought, rather pointed to a normal pregnancy, with slight pelvic peritonitis.

Until the end of the first week in March there was little change; the symptoms were rather better.

There was a continuous bloody discharge, but the pain was less, and at longer intervals.

No membrane or shreds had been, or were subsequently passed.

On March 8th she was suddenly seized, while at stool, with severe pain. Dr. Taylor found her pale, with cool extremities, and feeble pulse.

A hypodermatic of morphine and other means readily brought about reaction.

On the following day we again examined her, and found the uterus fixed, but pushed to the left side by a tumor which occupied Douglas's pouch and the

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right side of the pelvis. The diagnosis was now reasonably clear.

I pause in the recital of this history to remark that, at this time, an abdominal section should have been made; but how prone are we to lay to our souls the flattering unction which Schröder thus expressed: "With care, fatal issue is as a rule avoided: the subjects recover with unexpected quickness: the numerous lymphatics of the pelvis quickly absorb the blood."

Dr. Taylor's report says, "Symptoms of mild peritonitis continued; her condition improved; no opium was required, and she was free from pain for a week. Her appetite was better, and all the symptoms favorable. The tumor did not increase in size."

On March 27th she was seized with severe pain: the pulse jumped from 104 to 130, and there was increased peritonitis.

The situation had already been fully explained to the husband; preparations had been fully made for an abdominal section, and this was at once urged. Notwithstanding his foreknowledge, her husband did not give his consent to the operation until March 30th.

The patient's condition was then very unfavorable; the abdomen was swollen, the skin had assumed a deep icteroid hue, and the pulse was very feeble. The abdomen was opened with the assistance of Drs. Taylor and R. W. Mitchell.

A large amount of clots and dark, bloody serum was found, with a ruptured Fallopian pregnancy of about the tenth week, the fœtus being discovered alongside the right tube.

After removal of all these and ligation of the tube, the abdomen was irrigated with hot water and a drainage-tube inserted.

Though she bore the operation well, and was put to bed with a pulse of 104, the patient did not improve.

There was much discharge of dark fluid from the tube; the color of the skin deepened; the pulse increased in frequency; she became delirous, and died on the third day.

CASE II.—Mrs. K., aged thirty years. Had one child eight years ago. No conception since.

Her health was good and menstruation regular up to the 15th of May, 1889. About the middle of June there was a slight "show." Soon after this she began to have nausea, and concluded that she was pregnant.

On the night of July 19th there was a discharge of blood lasting for several hours, and unattended with pain.

On August 12th, and several times afterward, there was a slight bloody discharge.

About the last of July symptoms of peritonitis appeared; the abdomen swelled, was tympanitic and very tender on pressure. Pain was also complained of, oftentimes severe enough to require morphine. There was a slight rise of temperature and pulse.

The vomiting which began after the 15th June continued. On the 15th of September, when first seen, she was emaciated and feeble from inability to take food and from long suffering. She was confined to bed, and required an opiate nearly every day. The pulse was 90; temperature 99°. The entire abdomen was swollen, very tender to the touch, and tympanitic except over the lower portion, where an ovoid tumor was observed rising from the pelvis as high as the navel, and lying chiefly to the right of the median line. The tumor was dull on percussion, and no fluctuation was perceptible.

A vaginal examination showed that the uterus was pushed to the left side, its fundus lying forward, and the cervix directed toward the left sacro-iliac symphysis. It was fixed in this position by a tumor which occupied the middle and right side of the pelvis, which was evidently a part of the uterus and also of the abdominal swelling. The uterine sound entered three and one-fourth inches. Its withdrawal was followed by a bloody discharge. The cervix was swollen, soft and patulous, and all the tissues were unusually succulent. The purple hue of the vagina so often present in pregnancy was absent, and no mammary signs of pregnancy were detected.

I at once made the diagnosis of a four months' tubal pregnancy, with rupture between the layers of the broad ligament.

It was evident to me, and to Dr. Edward Mitchell, who saw her with me. that the patient could not live to the end of the nine months. Her only chance was in immediate operation, and the gravity of the case was at once explained to her husband.

With a view of diminishing the vascularity of the sac, and thereby lessening the dangers of laparotomy, I proposed to destroy the fœtus by electricity, and remove it after a week or two. A Gaiffe battery was used the next day, and again on the day after. Strong uterine pains followed this treatment, and a complete decidual mass as thick as the index finger was expelled. The battery was not used again, and as it was evident that the patient was losing ground, laparotomy was done on September 20th.

On opening the abdomen a dark tumor appeared, with uneven surface. It filled the pelvis, and rose to the umbilicus.

Very nearly in the line of the incision was an ovoidal prominence which did not fluctuate. Believing it to be the fœtal sac, I passed a very small trocar in to remove the fluid, but nothing escaped through the canula. After moving the canula in several directions, a bloody stream issued from it. On withdrawing the canula the delicate sac ruptured to the extent of allowing the extrusion of a four months' male fœtus.

There was quite a free flow of blood from the sac, but it was promptly stopped by packing with iodoform gauze.

The edges of the sac were then stitched to the abdominal incision. I was desirous of avoiding drainage in this case, and of leaving the placenta, as Mr. Tait has recommended, by filling the sac with water and afterward closing it so as to exclude the air; but the accidental injury to its wall causing

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bleeding, made it necessary to drain, and the gauze was relied on for this purpose.

After this operation the abdomen, much distended, was not appreciably diminished in size, and the upper sutures were tied with considerable tension.

The patient's condition was not improved: she was much exhausted, and was restless. The next day her pulse was 96, and temperature 99°. There was much watery discharge from the sac. Hiccup became a troublesome symptom. On the third day the stomach was quiet, and temperature normal, but the pulse had risen to 115. On the evening of the fourth day she died, apparently from exhaustion.

Autopsy: The edges of the sac were firmly adherent to the abdominal wall. The placenta was attached to the left wall of the sac. The large tumor rising to the umbilicus was found to be almost entirely a hæmatoma, between the layers of the right broad ligament, which had detached the peritoneum from the right and posterior walls of the pelvis, and partially from the posterior surface of the uterus.

The tumor was composed of large masses of fibrin, much black coagulum, and a good deal of fluid blood.

Could such a mass be disposed of except by suppuration? The mass after removal, draining of liquid, and exclusion of coagula, was larger than a child's head.

Could it have been enucleated and tied off? The hemorrhage and shock would probably have destroyed the patient on the table.

The peritoneum was clean. There were no adhesions, but the intestines were distended as before the operation.

The fœtal sac occupied an insignificant part of the tumor. The fœtus had been dead a few days only.

I have previously reported two cases of ectopic gestation in my own practice, one of which ruptured at eight weeks, and recovered without operation. The second was operated on six months after completion of the natural term of pregnancy. The latter patient was far advanced in phthisis, and the operation was done at her request. She recovered from the operation, but died a month later from lung disease—both apices showing cavities at the autopsy. This autopsy demonstrated beyond all doubt that the fœtal sac was entirely extra-peritoneal; that the gestation had originated in the right Fallopian tube, and had developed between the layers of the broad ligament, downward to the pelvic floor, laterally to the pelvic wall, and upward into the abdomen.

The case is of unusual interest, because, next to Berry Hart's celebrated frozen section, it was the first published to demonstrate an extra-peritoneal abdominal gestation. With this experience, and after much thought and study of the subject, I have but little confidence in my own ability to diagnose ectopic gestation in the early months, before the period of rupture.

Of the twenty-eight operations for the repair of lacerated cervix, all were successful, and in no case was there fever or other complication. In one case I availed myself of a suggestion made by Dr. Bache Emmet—to operate first on but one side, and several weeks later, when involution has proceeded somewhat, to close the rent in the other.

Emmet and Schatz, on the same day of the month, and in the same year, 1883, the one in Philadelphia, the other in Freiburg, read papers before societies on injury to the pelvic floor in childbirth.

Each pointed out how displacements of the pelvic viscera, and especially prolapse, were dependent much more on such injuries than upon a laceration of the perineum. One regarded the injury as an overstretching and separation from the attachments of the pelvic fascia. The other considered it to be a laceration of the fibres of the levator ani, close to their insertion into the descending ramus of the pubes.

Subsequently Hadra, as a result of his careful and intelligent study of the subject, was satisfied that there was a true diastasis, near their sacral attachments, of the levators, and a retirement of the muscular strata toward the pubic insertion.

While this anatomical discrepancy of opinion still exists, and we are yet in ignorance of the exact nature of the injury, a decided modification of our methods has resulted, and the operations which I have been doing since Emmet's paper was published have had for their object a restoration of the support which is afforded by the pelvic floor rather than a simple restoration of the perineum proper.

In most of my cases the operation performed has been that which Emmet has described for "Prolapse of the Posterior Wall of the Vagina," and the results which I have obtained by this method have been eminently satisfactory.

In a few cases during the past year I have done Martin's operation, which is particularly appropriate when there is great relaxation of the vagina.

I may here remark that Martin's operation consists really of two operations, the first being a double elytrorrhaphy, the denudations being on each side of the columna rugarum posterior, while the second has for its object the building up of the perineum. In the second the denudation is almost identical with that of Emmet, while the suturing of one is quite different from that of the other.

In my table of operations there are five rectoplasties and four anterior colporrhaphies. These have been done according to Martin's method. This method is so simple and possesses so many merits that I can strongly commend it. It would be improper in this place to go into details which

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have been published elsewhere (*American Journal of Obstetrics*, October, 1887), but I may say that the peculiar features of the method are the following:

The denudation, whether it be on the posterior or anterior wall, is done with the knife, the mucous and connective tissue layers being removed so as to expose the wall of unstriped muscular fibre.

A single continuous suture of catgut closes the wound, beginning at its upper angle, working downward, and, if it be on the posterior wall, including the rent in the rectum, and finally, closing the perineum.

Suturing in layers relieves tension, brings about union over a large extent of raw surface, and avoids the formation of pockets.

The method is to be commended for its extreme simplicity, the rapidity with which it can be done, the great comfort to the patient afterward, and because there are no sutures to be removed. One requirement for its successful performance, I am sure, is good catgut.

Without intending to make invidious comparisons, I may say that the raw catgut which Martin himself prepares, Nos. 2 and 3, known by the trademark "Wiesener," and made by Paul Hartman, of Heidenheim, and to be easily and very cheaply bought in any of the German cities, comes very near to perfection as a ligature.

This catgut I have prepared by Martin's formula, immersing it for six hours in a sublimate solution, 1 to 1000, then removing and drying it with a towel, and, lastly, immersing it in a mixture of oil of juniper and alcohol, one to two.

After a week's immersion it is ready for use, and is then a perfect ligature—as flexible as silk, exceedingly tough, and does not disappear from the tissues under seven days.

Of the five rectoplasties, all united most satisfactorily, and were complete successes. There was perfect retention of feces and gases. In but one of the cases was there cause for anxiety. In this the operation was done to close a large recto-vaginal fistula of eighteen years' standing, in a woman who was several years past the menopause, and whose general health was completely wrecked from long residence in a tropical climate, and from incessant headaches, which required the use of opium.

Through the fistula a large hemorrhoid frequently protruded in a half-strangulated condition; therefore, an operation for hemorrhoids was first required. Subsequently the recto-vaginal septum was divided to the fistula, the upper margin of which was one and one-half inches from the anus. The edges of the fistula were pared, and the lateral folds of the vagina denuded. The entire wound surface was then closed by the continuous catgut suture in tiers. A small fistula remained, but three months later the patient came to show me that a complete success had been accomplished, the minute opening having closed. The extreme thinness of the septum, and the abundance of cicatricial tissue near the fistula, made a successful result very improbable. In this operation of Martin for complete rupture of the perineum into the rectum, as in that of Bantock and others, no attempt is made to recover and suture the ends of the ruptured sphinter.

Emmet thinks that freshening the edges of the muscle, and bringing them into perfect apposition, are necessary.

It is difficult to prove that the atrophied fibres of the sphincter in an old laceration are ever recovered, and if they were, the union of the ends would not be muscular, but only by connective tissue. While discussing the repair of muscle in wounds, Mr. Thomas Bryant states that his observations "confirm those of Billroth, who declares that he has never seen anything which he could regard as a reformation of muscular fibres, and that the cicatrix in muscle is almost entirely connective tissue, the extremities of the muscular fibres after division and repair uniting with the cicatricial tissue in the same way as they do with the tendons." (*Internat. Cycloped. of Surgery*, vol. ii.)

The four anterior colporrhaphies were for very extensive prolapse, and in each the denudation extended from the meatus urinarius to the cervix uteri. They were satisfactory in every respect.

During all the plastic operations herein discussed the field was irrigated by a gentle stream of pure warm water, and the wound thereby made aseptic.

After operation the only need for opium is to control the bowels, which in the rectoplasties are not allowed to move until the fifth day. Subsequently they are moved every two or three days.

No vaginal douches are used; merely irrigation of the external genitals after urination.

The rectal tube is of immense value after rectoplastic operations.

In the work herein submitted, I may state that there has been nothing like sepsis in a single case.

NOTE.—In rectoplasties, fearing a possible solution and giving way of the catgut before union is obtained, I have as a precaution passed a special suture of silkworm-gut at the anal margin through the ends of the sphincter. I think the benefit from the suture, to which Emmet attaches so much importance, is not in procuring union of the sphincter, but in holding the ends of the sphincter quiet, and thus preventing their contractions from interfering with union.

A French Hospital in Turkey.—The *Press and Circular* states that a hospital and dispensary will be established at Constantinople at a cost of about $800,000, the appropriation to be chiefly obtained from legacies.

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ASTHMA AS A NEUROSIS.

BY J. G. CARPENTER, M.D.,
OF STANDFORD, KY.

"ASTHMA is an affection characterized by severe paroxysmal dyspnœa, recurring at more or less marked intervals, generally in the night, the dyspnœa being due to spasmodic contractions of the bronchi, produced by a variety of causes."—*Quain's Dictionary of Medicine.*

"Asthma may be defined as dyspnœa of a peculiar urgency and violence, generally paroxysmal and recurrent; often periodic; not necessarily attended by cough or expectoration; accompanied usually by dry râles, and compatible with easy and healthful respiration in the intervals of the attacks."—*Reynolds's System of Medicine.*

"A violent form of paroxysmal dyspnœa, not dependent upon structural lesion; with great prolongation of the respiration, and with absence of all symptoms of the disease during the intervals between the attacks. Its synonyms are *asthma convulsionum* (Willis); *spasmus bronchialis* (Romberg, *asthma nervosum* or *Krampf der Bronchien*)."—*Pepper's System of Medicine*, Beimer.

A most zealous advocate of the spasm theory of asthma as a neurosis depending upon tonic spasm of the bronchial muscles, and caused by faulty innervation of the pneumogastric nerve, "claims that this theory is confirmed by clinical experience; and that the suddenness with which the attack comes on and disappears, the long and forced respiration, with the sibilant râles, and other evidences of stenosis which accompany it, admit of no other explanation." As a proof of this, spraying the rhino-pharyngo-laryngeal chambers with cocaine, the internal free use of chloral or the hypodermic injection of morphine, or the latter with atropine, inhalation of ether or chloroform, or the relaxing effect of ipecac, antimony, or apomorphia, by nauseation, causes the immediate disappearance of the paroxysm and the concomitant symptoms. The absence of morbid anatomy to indicate the specificity of asthma, the suddenness of its coming and going, the intervals of repose, the enjoyment of perfect health at these periods, explain its neurotic origin.

Lebert considers that bronchial spasm is an all-important factor, but denies that it is in itself sufficient to account for the sudden and enormous inflation of the lungs observed in this disease. He doubts the possibility of a valvular closure of the bronchi, but believes that the bronchial spasm, which he regards as primary, causes secondary contraction of the diaphragm and inspiratory muscles of the neck and chest.

Theodore Weber discards the above theories because neither bronchial spasm nor contraction of the diaphragm explains why catarrhal secretion should appear at the close of an attack in which at the commencement there was no catarrh. He attributes the phenomena of asthma to sudden swelling of the bronchial mucous membrane, the result of dilatation of the bloodvessels, produced through the agency of the vaso-motor nerves, thus reviving the fluxionary theory of Traube.

To prove this theory Van Loven's experiments are cited, which prove that irritation of the sensory nerves is followed by the reflex engorgement of the territory to which they are distributed.

Weber considers that this engorgement of the bronchial mucous membrane is somewhat similar to the acute swelling and stoppage of the nostrils to which many persons are subjected—a closure which does not last longer than a few moments, and which is attended with increased redness and swelling of the Schneiderian membrane. The mucous membrane of the nostril and that of the bronchi being both parts of the respiratory tract and somewhat similar in structure, he concludes that the process in the nostril is analogous to that which occurs in the bronchi during the asthmatic paroxysm. He cites the fact that such occlusion of the nostril is often the precursor of the asthmatic attack, and in some cases continues throughout.

Max Schaeffer maintains that asthma is due to bronchial fluxion as advocated by Weber, but claims that hyperæmia is followed by spasm of bronchial muscles, the former being primary, the latter secondary. Reid, with the most recent writers, believes that asthmatic attacks are due to pathological conditions in and about the upper air passages, such as naso-pharyngeal and laryngo-tracheal catarrh, polypi, hypertrophies of turbinated processes, tonsils, both facial and pharyngeal, or one or both, and enlarged cervical glands. The writer believes that deviated septa, nasal occlusions, diseases of the antrum, maxillæ, decayed teeth, and impacted cerumen in the auditory canal, all act as irritants, and, the irritation being transmitted through adjacent nerves to the organs involved, causes bronchial spasm.

Pathological Anatomy.—Bronchial asthma is purely a neurosis. No ante- or post-mortem anatomical lesions are found to indicate a condition peculiar to asthma. The most that can be said (pathologically) is that there are certain functional disturbances which disappear with as much certainty and rapidity as they appear, and that asthma is, as a rule, but the sequel of some lesion in the upper respiratory tract as a predisposing cause, followed by an acute or sub-acute catarrh of the upper air-passages as an exciting cause—either a rhinitis, rhino-pharyngitis, ethmoiditis, sphenoiditis, or frontal inflammation.

There may be present only the dry or congestive stage of acute catarrh, the liquefactive or the muco-purulent stage, or there may be irritation of the

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mucous membrane and nerves supplying it, of the upper respiratory tract. The quieting of this irritation, the arrest of the acute catarrh in one or more of its stages, checks and cures the asthma temporarily. The cure of any chronic catarrh of the upper air-passages, removal of myxomata, fibromata, turbinated hypertrophies, nasal occlusions—as enchondromata, exostoses, spurs and ridges on the septum, deviations of the septum, diseases of the antrum, and decayed teeth—prevent the return of the disease.

In some cases irritation from tumors in the abdominal cavity, hepatic or gastro-intestinal irritation may be transferred to the pneumogastric nerve, and cause bronchial spasm. In cases of long standing, owing to often-repeated attacks of asthma, the air-cells may become permanently distended, attenuated and ruptured; emphysema may result, or the pathological lesions of chronic bronchial catarrh and its accompaniments in the upper respiratory tract may be found on making a post-mortem examination.

Hyper-distention of the alveoli and impaired circulation of the blood by repeated attacks of asthma will also produce cardiac disease.

The dyspnœa of bronchitis, cardiac disease, emphysema, spasm of the glottis, œdema of the glottis, tracheal stenosis, spasm of the diaphragm, paralysis of the posterior crico-arytenoid muscles, and embolism of one of the middle or larger pulmonary arteries, should not be mistaken for asthma. The asthma attending hay-fever will not be discussed in this paper, further than to state that the predisposing etiological factors which cause asthma have also been found in hay-fever, viz., diseases located in the upper respiratory tract, and that the medical, surgical, hygienic, and climatological factors which relieve and cure asthma have also cured this troublesome malady.

Rheumatism and gout play an important *rôle* in asthma, and during sudden changes of weather or temperature, asthma, bronchitis, or some skin eruption, may appear in the absence of a rheumatic or gouty attack. Uræmia, from diseases of the kidneys, may cause the most severe attacks of asthma.

The most constant change observed in the bronchial tubes in old cases of asthma is hypertrophy of their muscular fibres, causing thickening of their walls and diminished calibre. In other cases they are dilated, but this condition is due rather to the concomitant bronchial catarrh than to the asthma. The venous blood, obstructed in its course through the lungs, accumulates in the pulmonary artery, and, pressing back upon the right ventricle, excites it to increased action, which, in the course of time, leads to hypertrophy of its muscular fibres and dilatation of its cavity. Syphilis, lead and mercurial poisoning, may cause asthmatic attacks through irritation of the medulla oblongata or through the pneumogastric nerve, in the same manner as does rheumatism, gout, uræmia, or malaria.

Malarial asthma, while not so common as malarial neuralgia, does often exist, and is relieved and cured by anti-malarial treatment.

Some of the most distressing cases of asthma the writer ever witnessed were due to a retroversion of the uterus and pressure on the sacral nerves. The treatment in these cases consisted in the use of large hypodermic injections of morphine and atropine to allay the paroxysms, while further attacks were prevented by replacement of the womb and the adjustment of a suitable pessary.

Various authors claim that asthma is inherited and even give examples where the father and three of four children had asthma, and where the disease appeared in four generations; or one generation may have had asthma; the next, gout or rheumatism; the third, epilepsy; and the fourth, asthma.

The writer of this paper doubts the heredity of asthma, but believes that a neurotic diathesis is inherited, and that from certain predisposing and exciting causes asthma would be caused in one case, epilepsy in another, and St. Vitus's dance in a third.

Riegl states that the action of the irritant in asthma may be explained in one of three ways: (1) Both the spasm and congestion may be the common result of the irritant; (2) the catarrh may cause the spasm; or (3) the spasm may, secondarily, cause the catarrh.

Most cases of asthma occur in childhood: from one to ten years, 71 cases; ten to twenty years, 30 cases; twenty to thirty years, 39 cases; thirty to forty years, 44 cases; forty to fifty years, 24 cases; fifty to sixty years, 12 cases. (Salter.)

The reason that asthma is so much more prevalent in childhood is, to the author's mind, due to the improper management of the child at birth; even in half an hour after its advent, a rhinitis is developed from undue exposure and the rapid evaporation from the body and radiation of heat: the child starts in life with a cold, has continual recurrences, thereby establishing chronic or subacute catarrhal inflammation of the upper air-passages, which with its sequelæ furnishes the most potent predisposition to asthma. The prognosis is good if the proper treatment is given before irreparable structural lesions have taken place. The patient starts wrong, and goes wrong until he falls into the hands of the rhinologist, and, as a rule, in due time is cured, for as asthma is a neurosis, the removal of the cause removes the effect.

Children and adolescents recover with proper treatment more rapidly than adults.

Persons of rheumatic, gouty, or phthisical diathesis do not recover so rapidly.

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Dr. F. H. Bosworth (*The American Journal of the Medical Sciences*, September, 1888) reports an analysis of eighty cases of asthma, with special reference to local diseases of the upper air-tract, and concludes that asthma is a reflex disease. He divides asthma into hay-asthma and perennial asthma, the former being a vaso-motor rhinitis, the latter a vaso-motor bronchitis, and believes that they are virtually one and the same disease, the paroxysms being excited by atmospheric conditions.

Hay-fever depends on three conditions: 1. A neurotic habit, as shown by Beard. 2. The presence of pollen. 3. A disordered condition of nasal passages.

Asthma depends on three conditions: 1. Neurotic habit, as shown by Salter. 2. Disease of nasal mucous membrane. 3. Obscure conditions of the atmosphere.

According to Bosworth, a large majority, if not all, cases of asthma are dependent upon some obstructive lesion in the nasal cavity. This is proved by the relief furnished by local application of cocaine, and by the permanent relief of so many cases by removal of the obstruction in the upper air-passages. Thirty-four of Dr. Bosworth's 80 cases of asthma had hay-asthma; 46 had perennial asthma; 29 of the cases of hay-asthma and 33 of perennial asthma had nasal symptoms preceding the attack; 60 of the cases were ushered in by sneezing and other nasal symptoms; 84 gave a history of catarrhal trouble. Of the 34 cases of hay-asthma, when examined as to local condition in the nose, 9 had hypertrophic rhinitis, 12 had hypertrophic rhinitis and deflected septum, 4 polypi, 5 polypi and deflected septum, 3 deflected septum, and 1 had elongated uvula.

Of the 46 cases of perennial asthma, 13 had hypertrophic rhinitis, 11 nasal polypi, 11 hypertrophic rhinitis and deflected septum, 6 polypi and deflected septum, 2 adenitis and hypertrophic rhinitis; thus showing that all of the 80 cases of asthma examined as to the condition of the nose presented some obstructive lesion. The treatment in these 80 cases was the use of caustic, the nasal saw, and the snare. In the hay-asthma cases 18 were cured, 14 improved, 1 unimproved, 1 result unknown. In the cases of perennial asthma 28 were cured, 12 improved, 2 unimproved, and 4 unknown.

The writer has had under observation between 20 and 30 cases of asthma, and can confirm the tabulated analysis of Dr. Bosworth. In fact, the above statements are the uniform experience and observation of all practical rhinologists.

The statistics of Salter show that persons from one to ten years of age are subject to asthma. This, no doubt, is due to the facts that in addition to the improper and unhygienic treatment given the infant at its birth, producing a chronic or subacute rhinitis, scarlatina, measles, whooping-cough, diphtheria, and roseola, bring about the most favorable predisposing causes of asthma, viz., diseases of the upper air-tract. Beside the conditions just enumerated may be mentioned improper dress, the follies of fashion, the use of tobacco, alcoholic beverages, snuff, and certain occupations—such as milling, cigar-making, blacksmithing and hemp-breaking.

A lady, aged twenty-six years, mother of two children, eight weeks after her second confinement consulted the writer. She had chronic naso-pharyngitis, subinvolution of the uterus, anal fissures, and spasm of the sphincter ani, and had been subject of late to asthmatic attacks. Divulsion of the sphincter ani, the curing of the subinvolution of the uterus and the catarrhal inflammation of the upper air-passages prevented a return of the asthma, proving conclusively that in this case the asthma was a neurosis. There was no permanent relief until after divulsion.

One of the most distressing forms of asthma is uræmic asthma. In the treatment of this variety, there are three indications: 1. To eliminate from the system the poison already present. 2. To prevent its deleterious effect upon the nerve centres and terminal nerves. 3. To prevent the further or excessive formation of urea. The first is done by the hot air bath, hot water and steam bath, or pilocarpine causing copious diaphoresis, by digitalis and acetate of potash, frequent draughts of hot water, and washing out the kidneys and urinary tract by free diuresis. Also by the elimination of waste products by hydragogue cathartics. The second indication is met by the effects of morphine on the terminal nerves and on the nerve centres. The third indication is to circumscribe the diet, feeding the patient on milk, and preventing the formation and absorption of further poisons. Dr. Stephen Mackenzie in the London *Lancet*, states: "I think all the facts of uræmic dyspnœa, its periodicity, sudden onset, and relief by anti-spasmodics, point to a spasmodic neurosis due to poisoning of the nerve centres, and suggests that the spasm is rather of the bloodvessels than of the bronchial tubes. Beside the hypodermic use of morphine in renal asthma, the author has seen the happiest results in cases of uræmic convulsions and coma. The following case is an example of this:

Patient, a female about twenty years of age, had been comatose twelve hours or more, and had had from one to three convulsions every hour. The case had been diagnosed "hysterical coma and convulsions." One-fourth grain of morphine was given hypodermically, and the convulsions lessened; in two hours another fourth of a grain was given, and in an hour the convulsions had ceased. In two hours from the administration of the last dose, another was given. An hour afterward patient was partially conscious, and in three hours was entirely

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conscious, thoroughly herself and talked freely. The pupils had contracted to the normal size, pulse was full, strong and regular, respiration and temperature normal. With every dose of morphine thirty drops of tincture of digitalis were given.

To Professor Loomis, of the Medical Department of the University of the City of New York, the profession is indebted for the use of morphine as an antidote to uræmic poison. He states that when premonitory symptoms of acute uræmia were found, as well as during the active manifestation of uræmic intoxication, so far as he is able to judge, its administration has been uniformly followed by good results. In no instance is he aware that he has caused a fatal narcotism. Dr. Loomis has given from one-half to one grain injections to a patient in complete coma. He claims positive relief of distressing and dangerous symptoms and in addition: (1) to arrest muscular spasm by counteracting the effects of the uræmic poison on the nerve centres; (2) to establish free diaphoresis; (3) to facilitate the action of cathartics and diuretics, more especially the diuretic action of digitalis. To the expert diagnostician in renal as in other asthmas, morphine is a therapeutic remedy of the highest value. The writer believes it has a specific effect, as has also belladonna, on the spheno-palatine ganglion.

The spheno-palatine ganglion supplies branches to the nose, throat, soft palate, and Eustachian tube. It possesses a sensory, a motor, and a sympathetic root. It is connected with the pneumogastric and facial nerves, and through its numerous connections an intimate sympathetic relation is established between the throat, nose, ear, larynx, and bronchial tubes. Removal of this ganglion causes a severe catarrhal condition of the nasal mucous membrane. This membrane is continuous with that which lines the eyelids and nasal duct, the throat, Eustachian tubes, the middle ear, larynx, trachea, and bronchial tubes. An irritation or congestion started in the nasal chambers may extend reflexly to the pneumogastric nerve, and cause asthma by bronchial spasm, or the irritation may be so great as to cause, in addition to asthma, acute or subcute catarrhal inflammation of the upper air-passages and bronchial tubes. Opium and its preparations and belladonna have a specific effect in allaying irritation and checking inflammation and secretion in the upper air-passages by acting on the nerve centres, and are highly important not only during paroxysms of asthma, but in the intervals to assist local treatment in allaying chronic irritations and congestions. In connection with quinine and nux vomica they exert a powerful tonic influence on the vaso-motor nervous system. Given in tonic doses three times a day, they prevent the return of the asthma, while the intra-nasal disease is being cured locally. They also prevent acute and subacute catarrhal inflammation in the upper air-passages.

The majority of cases of asthma that I have seen were affected with nasal disease, especially chronic naso-pharyngitis and hypertrophic rhinitis.

Nitroglycerin has an important place in the treatment of the paroxysm and during the intervals, through its effects on the vaso-motor nervous system, the tablets being administered every three to six hours. Chloral hydrate has a decided action in allaying the attacks of asthma. When the paroxysms are very violent and threaten life, chloroform by inhalation is indicated, and proves helpful. In asthma attended by bronchitis and laryngitis, the fluid extract of Grindelia robusta, paregoric, and syrup of Yerba santa, equal parts, every two, four, or six hours, has proven valuable, but at some future time the asthma returns.

Wine of antimony, or ipecac with paregoric, and fluid extract of Grindelia robusta, equal parts, to check and prevent a return of the asthmatic paroxysm has proven a valuable prescription in my hands.

Where there is present a malarial, rheumatic, gouty, or a syphilitic dyscrasia, or mercurial or lead poisoning, the appropriate constitutional treatment for these affections must be given during the intervals of repose. Any gastro-intestinal or hepatic irritation must have its appropriate form of treatment.

As in most asthmatics the general health is impaired, especially in those who have had long-standing chronic intra-nasal irritation and disease, there is an innervation of the vaso-motor nervous system attended with marked anæmia and neurasthenia that demands for its amelioration iron, quinine, strychnia, phosphorus, and electricity.

With three of my patients chromic acid applied to the turbinated processes has checked the paroxysm of asthma almost instantly, and without the previous use of cocaine locally. In one of these cases it was applied to the inferior and middle turbinates (a hay-fever patient); in bronchial asthma, twice to the middle turbinates, and once to the superior turbinated processes.

The local treatment consists in treating intra-nasal diseases. For chronic rhino-pharyngitis, or the latter and laryngo-tracheitis, a two or four per cent. solution of muriate of cocaine is sprayed into the upper air-passages, followed by soothing, non-irritant, mild, astringent, antiseptic, and protective medicines, vaseline being the base, in the form of a spray, every day or every other day *pro re nata*—using it either with DeVilbiss's or Rumbold's spray-producers. Where hypertrophic rhinitis or intra-nasal myxomata, or fibromata, enchondromata, septal spurs or ridges, deflected septums, or foreign

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bodies lodged within the nose exist, chromic acid, the snare, galvano-cautery, nasal drill, burrs, forceps, saw or punch should be used in addition to the medical treatment to effect a cure. The vaseline and cocaine spray with some antiseptic should be used after an intra-nasal operation to protect the lesions and tissues, prevent congestion, and render the parts and secretions aseptic. Besides numbing the tissues with cocaine, spiritus frumenti taken internally half an hour before operation, one or two ounces every five minutes, enough to cause partial anæsthesia or intoxication without unconsciousness, has proven a most valuable anæsthetic, and in intra-nasal surgery is to be preferred to chloroform or ether. It can be used with or without cocaine locally; should too much of the latter be used, whiskey would be prophylactic against poisoning.

This paper would be incomplete should inunctions of vaseline and the systematic daily use of massage be omitted.

Concerning the climatic treatment of asthma these facts have been observed, viz.: that asthmatics with chronic rhinitis, hypertrophic, or rhino-pharyngitis, attended with copious secretion, do best in a dry, high, warm, attenuated atomosphere. Those with atrophic rhinitis do best in a moist, warm atmosphere of low altitude. Asthmatics with a mixed form of rhinitis, viz., the hypertrophic and atrophic combined, do best in a warm, moist, low atmosphere, or a high, warm, dry locality, depending upon the predominance of the former or latter variety of disease. Patients have found great relief from asthma and intra-nasal disease by a sojourn in Texas about San Antonio; Orlando, Florida; Thomasville, Ga.; New Mexico, and Southern California—in fact, claim to be well, entirely unconscious of any nasal irritation or disease. One patient claims the dry, dusty atmosphere of Colorado aggravated and increased the nasal disease and made the paroxysms of asthma more violent and their recurrence much oftener. Another patient was entirely free from asthma so long as he lived at Louisville, Ky., but has recurrences on going to the country and remaining a few days.

ON CALF-PEPSIN, AND ESPECIALLY THE GLYCERITE OF CALF-PEPSIN, AS AN ADJUNCT TO A MILK-DIET.[1]

BY FRANK WOODBURY, A.M., M.D.,
HONORARY PROFESSOR OF CLINICAL MEDICINE IN THE MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA, ETC.

FOR a number of years, in treating cases of apepsia in infancy and as an adjunct to a milk-diet at a later period of life, I frequently used rennet-wine, which was acceptable to the patient and which, I believed, had some peptonizing power. I also occasionally met with a communication in the medical journals reporting favorably upon its employment in the digestive disorders of infants. The experiments of Scheffer, published in 1870, in the *American Journal of Pharmacy*, however, demonstrated very conclusively the fact that an alcoholic menstruum was not suited to the preservation of digestive power in a pepsin preparation, and that glycerin diluted with water was the best of all menstrua for this purpose. Last winter, in conversation with Mr. Llewellyn (successor to Hubbell & McKelway), who has had considerable experience in the manufacture of the wine of rennet, I suggested that a solution made with glycerin would be more acceptable, and would prove to be a more active digestive agent than the alcoholic preparations. After several consultations and experiments, we produced this Glyceritum Pepsini Vitulini. The method followed in its manufacture is as follows: The stomachs of healthy young calves are washed clean with running water, the mucous membrane is dissected off, crushed, and treated with glycerin and slightly acidulated water, in which it remains until the pepsin is all extracted; the solution is then filtered carefully, and to it is added a small proportion of the acid phosphate of lime. This was considered a useful addition, because cow's milk is slightly deficient in this constituent as compared with breast-milk, and in order to insure a faintly acid reaction to the finished product. Scheffer found, in the experiments already referred to, that calf-pepsin requires the presence of an acid medium to enable it to exert any digestive action upon albumen.

As milk is increasing in favor, not only as an easily obtained and easily assimilated form of nourishment, but also as a therapeutic agent of no mean value, in inveterate indigestion, in gastric ulcer, diabetes, renal disease, typhoid fever, inanition, as an important part of the rest-cure, and in the perennial baby-feeding problem, the favorable and unfavorable conditions affecting its administration deserve consideration. Quite apart from the results of intentional or accidental adulteration and variations in the quality of the milk, which have been frequently discussed in the medical journals, there may be objections raised by the patient himself, often arising from defective digestive capacity, that may prevent the use of milk, which otherwise would be appropriate to the case. Bartholow[1] has pointed out some of the abuses of milk-diet in therapeutics, and very properly advises against its administration in acute rheumatism, especially in large quantities, on account of the excess of lactic acid introduced into the system by its digestion, which he believes increases the risk of endocarditis, delays recovery

[1] Presented to the College of Physicians, Philadelphia, November 6, 1889.

[1] Journal of Reconstructives, vol. ii., No. 3, p. 10.

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and favors the occurrence of relapses. He also states that "In certain disorders of the digestive functions milk causes a sense of discomfort, decided uneasiness, oppression, sometimes even pain, and it prolongs the morbid condition. Such cases may be grouped into two classes: those in which the casein is the offending material; those who cannot properly digest the cream or butter. We find examples of the first class more frequently among children, but they are by no means uncommon in adults. They are detected more readily in early life, because the curds are rejected by vomiting or appear undigested in the stools. Adults unable to digest casein, or who digest it slowly or painfully, have epigastric distress, heaviness and oppression for several hours after meals, stupor and disinclination for exertion coming on after an hour or two and continuing until the offending material has passed well down the intestines." The remedy for digestive disorder occasioned by excess of cream is generally applied with quite unusual consideration for the patient's welfare, by the milk-vender before delivering the article to the customer; when this has been neglected, the excess of cream may be removed by partially skimming the milk before giving it to the patient. This procedure will generally be required in the case of Alderney milk, which often contains too much fat even for infants.

When, on the other hand, there is experienced more or less difficulty in disposing of the casein (and this generally occurs in fever, on account of the deficiency of secretion from the peptic and other glands of the stomach), the administration of pepsin, or an artificial gastric juice, seems the natural resource. Where the diet is cow's milk, it seems reasonable to assume that calf-pepsin, being the proper digestive ferment for this food, ought to be a valuable aid to the treatment, to prevent the occurrence of *embarras gastrique* and to favor the assimilation of the albuminoids of the milk. The dry calf-pepsin, I believe, has been entirely superseded by the more active pepsin of the hog. Scheffer found that the former had only a moderate action upon boiled egg-albumen as compared with the latter; and probably hog-pepsin, when carefully prepared, is preferable for most purposes where a digestive ferment is needed. But where the diet is cow's milk and not hard-boiled eggs or meat, the calf-pepsin would seem to possess especial appropriateness.

Without extending this communication unduly by going into unnecessary detail, I would simply make the following claims, which appear to me to be well founded, for the solution of calf-pepsin in glycerin which I have just presented:

1. The glycerite of calf-pepsin, prepared in the manner described, is a permanent, reliable, and elegant pharmaceutical preparation, besides being the most active form in which to administer this agent.

2. It differs from the wine of rennet, in possessing greater coagulating and peptonizing power, a drachm readily acting upon a pint of milk. Rennet, as stated by Randolph, will not coagulate boiled milk; the glycerite of calf-pepsin does so readily, and forms a soft, delicate curd consisting largely of peptones. In the feeding of infants this property becomes of special importance, in view of the increasing prevalence of the use of sterilized (boiled) milk. In this connection we recall the statement of Kirchner that the difference in digestibility of milk from the cow and that from woman, is wholly due to the large amount of peptones in the latter.

In the case of infants, I usually direct that from ten to twenty drops of the pepsin preparation shall be given fifteen or twenty minutes after feeding; in adults one-half to one drachm is usually added to the milk before it is swallowed, as a matter of convenience. Junket made with this glycerite of calf-pepsin, from either boiled or unboiled milk, is a delicate and easily digested form of nourishment for the sick.

I would mention incidentally, in conclusion, that the preparation may be used to brush over the dry, coated tongue of typhoid fever patients, and to spray the throat in cases of diphtheria, although, as yet, I have not had the opportunity of using it for this purpose. I can, however, speak confidently of its value, in conjunction with sterilized milk, in artificially fed infants, and as a useful adjunct to the milk-diet treatment of various disorders of the stomach and nervous system.

218 S. 16TH STREET, PHILADELPHIA.

MEDICAL PROGRESS.

Hydronaphthol in the Treatment of Tinea Tonsurans.—According to DR. MORGAN DOCKRELL, the most efficient method of treating tinea tonsurans is the following: "Have the head completely shaved, leaving the usual fringe all round; then wash with a 5 per cent. hydronaphthol soap and water as hot as can be borne. After drying the scalp, apply over the affected area a 10 per cent. plaster of hydronaphthol in narrow strips, letting each strip overlap its fellow, taking care that the plaster extends quite half an inch beyond the margin of the diseased patch. Outside the margin of the plaster paint a layer of a 10 per cent. hydronaphthol jelly melted) so as to exclude all air. At the end of four days remove the plaster, when the diseased stumps will be found adhering to it. Repeat the process, applying for one week a 20 per cent. plaster. Again repeat the process, this time applying the 10 per cent. plaster for ten days, when on removal the disease will be found to be cured. During the plaster treatment apply a 5 per cent. ointment to the unaffected portions of the head night and morning. Care should be taken that all articles brought in contact with the head before treatment be destroyed, otherwise reinfection will take place, and the treatment be brought into discredit.—*Lancet*, November 30, 1889.

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Injections in the Treatment of Gonorrhœa.—FRIEDHEIM, of Leipsic, in determining the most useful injection for the treatment of acute gonorrhœa, assumes that the material to be injected should destroy the vitality of the gonococcus, and should allay, or, certainly not add to, the already existing irritation of the mucous membrane. In about 1200 cases he has experimented with solutions or mixtures in various strengths, of formamide of mercury, calomel, bichloride of mercury, tannic acid, the salts of zinc and lead, subnitrate and salicylate of bismuth, permanganate of potassium, pyrogallic acid, chloroform water, iodoform, creasote, boric acid, antipyrin, resorcin, salicylate of sodium, naphthalin, and creolin, all of which he found either without effect upon the gonococci, or too irritating. With weak solutions of nitrate of silver, as recommended by Neisser, his results were different, and, after experiments upon 318 patients, he concludes this to be the most satisfactory injection. This treatment, to be satisfactory, should be begun in the earliest stage of the disease. A solution of the strength of 1 : 4000 or 1 : 2000 should be injected from four to six times daily. In about four days the discharge becomes thinner and the cocci fewer. After this several of the daily injections of silver solution may be replaced by solutions of sulphate of zinc or boric acid, though at least one daily injection of the nitrate should be used for several weeks.

In a few patients the urethra will be found so sensitive that the silver solution in the strength mentioned will cause considerable pain, and in such the strength may be reduced or each injection preceded and followed by one of boric acid solution. Gonorrhœa situated in the anterior urethra Friedheim has found to be very favorably modified by this treatment, the duration shortened, and complications prevented. Gonorrhœa of the posterior urethra he believes should not be treated by injections of any kind.—*Therapeutische Monatshefte*, November, 1889.

Sweating of the Feet.—According to the *British Medical Journal*, experiments on 18,000 cases in the German army have conclusively proven chromic acid to be the most satisfactory application for sweating feet. The feet should be washed, and when dry a five per cent. solution of the acid applied with a brush. Two or three applications are, as a rule, sufficient, though in some cases the treatment must be repeated in two or three weeks.

Treatment of Tonsillitis.—DR. HABERKOM, in the *Centralblatt für Chirurgie*, recommends salicylic acid in the treatment of acute tonsillitis. "The best and simplest mode is to apply the powdered acid directly by means of a rather large camel's hair pencil, which may be slightly moistened. In this way it is brought directly in contact with the diseased surface, and but few applications are necessary.

When the tonsils are covered with a thick mucous coating—which may be diphtheritic—it is necessary to remove it previously, and the following liquid, to be also applied with a brush, acts extremely well:

Pepsine	30 grains.
Dilute hydrochloric acid	ʒj.
Water	ʒv.
Glycerin	ʒjv.

The coating is quickly dissolved (digested) by this solution.

Beside applying the acid locally, it is advisable to give it internally at the same time, thus:

Salicylic acid	30 grains.
Mucilage of acacia	ʒj.
Simple syrup	ʒss.
Water	ʒjvss.—M.

Dose.—A tablespoonful every two hours.

In the more chronic forms it is well to pencil the tonsils with:

Tannin	15 grains.
Tincture of iodine	2 drops.
Glycerine	ʒv.
Water	ʒj.

For the prompt dispersal of threatened quinsy, apply with a brush three times a day the following solution:

Tannin	15 grains.
Tincture of iodine	3 drops.
Carbolic acid	ʒss.
Glycerin	ʒv.
Water	ʒijss.

—*Provincial Medical Journal*, December, 1889.

Preparation of Aseptic Sponges.—PROFESSOR KEEN recommends the following method of preparing sponges for surgical operations:

1. Beat with wooden mallet, to get rid of sand and calcareous matter.
2. Soak in warm water for twenty-four hours.
3. Soak in solution of potassium permanganate (ʒj to gallon) twenty-four hours.
4. Wash thoroughly in warm water.
5. Place for one minute in—

Sulphite of sodium	ʒx.
Hydrochloric acid	ʒj.
Water	gallon j.

6. Wash in water and place in 20 per cent. solution of carbolic acid.—*College and Clinical Record*, December, 1889.

Treatment of Psoriasis at Lyons.—The following is the outline of Gailleton in the *Gazette Hebdomadaire* of December 13, 1889. The indications are: 1, cleanse the surface; 2, modify the local state; 3, prevent recidivity. For the first indication prescribe alkaline baths accompanied by frictions with soap to remove the scales. In the treatment of the diseased surfaces Gailleton prefers local application of chrysarobin or pyrogallol. The first is used in a pomade in the proportion of 1 to 10, and employed with frictions. The pyrogallol salve should be of the strength of 1 to 5 in psoriasis vulgare. Its use requires management since it may inflame the skin or provoke poisoning by absorption. It is also useful in the acute psoriasis of a scarlatiniform type.

The general and preventive treatment: Arsenic should be given in the acute stages, beginning with Fowler's solution, in the dose of five drops, augmenting it to twenty [small doses would probably be more safe.—ED.], or arseniate of soda may be given in syrup.

To complete the cure, use simple baths every day for one, two, or three hours. This is an important part of the treatment.

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The Treatment of Influenza.—In the *Revue Générale de Clinique et de Thérapeutique* of December 12, 1889, HUCHARD gives the following outline of the treatment of this troublesome affection, dividing it into that devoted to the benign form and those cases which present the more serious aspect. In all the past epidemics of this disease one of the principal evidences of its presence is the nervous adynamia. Against this state all our efforts should be directed, and for this reason quinine, alcohol, and similar drugs should be given, or, if the state be grave, injections of ether and cardiac stimulants. The quinine is indicated since it controls the fever. The dose should be from 7 to 15 grains in the morning, and 15 grains of antipyrin at night. Where no antipyretic is needed, small, frequently repeated doses of quinine are to be used as follows:

Sulphate of quinine . . 30 grains.

Make in 20 powders. Take 4 a day, or 1 every four hours.

In thpse cases where the disease is accompanied by rheumatic and neuralgic pains the following should be used, the soda quieting the stomach:

Antipyrin . . . . 150 grains.
Bicarbonate of soda . . 75 "

Make into 10 powders, and take 1 powder every four hours in a little sweetened water, between or immediately after meals.

If there is any reason why antipyrin is not successful, use phenacetin, 4 grains every three hours.

When the rheumatism is severe, use

Salol . . . . . 75 grains.

Make into 10 powders. Take 5 a day. [This we think too much by half.—ED.]

When the disease affects the pulmonary mucous membrane the condition often becomes most grave, and marked adynamia asserts itself. Stimulants, tonics, and good foods should be given, particularly milk. Diuresis should be increased to eliminate the poisons from the body, and this is particularly true in those cases where there is renal or cardiac dyspnœa. If collapse ensues, heat should be applied to the body and caffeine and digitalis given hypodermically. In those cases where the disease chiefly affects the gastro-intestinal tract, castor oil, or some similar purge, should be administered, and followed by salicylate of bismuth, or magnesia, naphthol, iodoform, or like drugs.

Dengue Fever.—Numerous observations are being made upon dengue fever in Eastern countries, where ample opportunities have been afforded by the epidemic which has been prevalent for some months. According to the *Revue Médico-Pharmaceutique* of Constantinople, although its microbe is as yet undiscovered the disease should be classed among the acute infectious maladies, resembling acute rheumatism and allied diseases.

As to the contagiousness of dengue fever, the writer has never observed or read a striking proof that this disease is propagated from person to person, as is the case with variola, while there are reasons for believing that its method of propagation is identical with that of Asiatic cholera and typhoid fever.

Dengue is not contagious; it is not miasmatic, like malaria, but a miasmatico-contagious disease, like Asiatic cholera, typhoid fever, and epidemic cerebro-spinal meningitis.

The poison is prepared in infected soil, and received by means of water and emanations.

A rocky soil, according to the theory of Pettenkofer, is highly unfavorable to the development of dengue.

Dengue has been believed to be contagious from the fact that several persons in a household are apt to be attacked by it. There are instances to the contrary.

Dengue attacks both sexes and every age without the least predilection. Very few persons are immune. The epidemic may become pandemic and attack even domestic animals.—*Abstract of Sanitary Reports*, December 20, 1889.

Formula for the Administration of Naphthalin.—DR. TICHBORNE, in the *Medical Press and Circular*, December 11, 1889, gives the following formula for the administration of naphthalin.

Naphthalin . . . . 16 grains.
Expressed oil of almond . 4 drachms.
Acacia . . . . . 1 drachm.
Syrup of orange . . . 1 "
Water . . . . . 3 drachms.

The naphthalin should be thoroughly mixed with the oil of almond before adding the remaining ingredients.

Subcutaneous Administration of Iron.—PROFESSOR ROSENTHAL, of Vienna, advocates the hypodermic administration of iron in the cases of delicate neurasthenic persons who suffer, as such often do, from atonic dyspepsia. Here even small doses of iron taken by the mouth will sometimes produce disorder of the stomach. In severer forms of disease, such as pernicious anæmia, malarial cachexia, and the graver forms of leukæmia, there does not appear to be any advantage in the employment of the hypodermic method of administering iron. Two new preparations are recommended by Professor Rosenthal for hypodermic use—viz., the peptonate and the oleate of iron. He states that he has never seen bad results follow subcutaneous injections of these preparations, and he explains the fatal consequences that have occasionally been reported as following injections into vascular tumors of the head, by the fact that the vessels composing such tumors are generally closely connected with the veins of the dura mater. He has frequently seen venous enlargements in the legs shrink after being injected with dilute perchloride of iron, no dangerous symptoms ever ensuing.—*Lancet*, December 14, 1889.

Prescription for Tympanitis.—The following formula for tympanitis is quoted in the *Deutsche medicinische Wochenschrift*, November 28, 1889:

℞.—Naphthol, Magnesium carbonate, Pulverized charcoal . . āā 75 grains.
Oil of peppermint . . . . 10 drops.—M.

Divide into 15 powders, of which one is to be given when required.

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SATURDAY, JANUARY 4, 1890.

POLITICS IN MEDICINE.

THE NEWS has hitherto forborne to comment upon the ignoble strife which the Mayor of Philadelphia has seen fit to wage with the forlorn and friendless sick paupers of the city. We could not believe that a majority of five citizens, selected as fit to act in the delicate and responsible position of members of a "Board of Charities" could be found who would prove faithless to their trust, and oblivious to the welfare of those whom they were bound by every consideration of duty and honor to protect.

The idiosyncrasies of our Chief Magistrate are so generally understood that we presume no one expected that the unreasoning wrath of his wounded vanity would be satisfied without victims, but it was not supposable that he would find three willing and obedient tools in the Board of Charities to carry out his commands. The only question which the Board had to consider in renewing the staff of the Philadelphia Hospital was the interest of the unfortunates whom poverty and sickness have thrown upon the tender mercies of public charity. They have no political pull; they have no opportunity of making their wants and miseries known to his Honor the Mayor over the whist-table: they are simply dumb sufferers who must submit in silence to their fate. If their ailments are treated with knowledge and skill they may recover and become useful citizens again; if they are treated ignorantly and are used as *corpora vilia* to educate young men and advertise medical colleges, they can only die in silence, and those dependent upon them can starve. To talk of dividing "patronage" of this kind among medical institutions is far worse than the worst political profligacy of office-brokerage, for the spoils to be apportioned are the agonies of the city's poor.

No more difficult or weighty duty could be imposed on five men than the selection of the thirty-three members of the hospital staff, on whom devolves the care of the sick paupers in the population of a million souls. With a conscientious man such a duty could only be discharged after the most careful and minute investigation into the acquirements and fitness of each aspirant and a selection based solely upon the interests of the unfortunates who are to be cared for. Yet when the Board assembled and a list of candidates was put in nomination, Mr. McMurtrie vainly begged for a postponement to enable him to make some inquiry as to the comparative merits of competitors whose names were wholly unknown to him. The voting was commenced forthwith in spite of his protests and went on with a regularity and precision which showed that the slate had been made up by a power behind the throne, and that the Board was there simply to register its decrees.

In the name of the profession and of common humanity we protest against such political management of a great public charity, and we do this irrespective of the comparative merits of the gentlemen who were dropped and of those who were elected to their places. We are not criticising the latter, but the methods by which politicians have used them to establish political autocracy in the management of the hospital, and to proclaim that subserviency to the wishes or whims of the Mayor is the condition upon which members of the profession can have the privilege of ministering to the sick poor. If good men can thus be used this year, indifferent men or bad men can be so used next year. It becomes a matter of chance or caprice, in which the real interests concerned—those of the patients of the hospital—are the last to be considered.

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REVIEWS.

CYCLOPÆDIA OF THE DISEASES OF CHILDREN, MEDICAL AND SURGICAL. By AMERICAN, BRITISH, AND CANADIAN AUTHORS. Edited by JOHN M. KEATING, M.D. Vol. II. 8vo., pp. 1066. Illustrated. Philadelphia: J. B. Lippincott Company, 1889.

THE second volume of this Cyclopædia more than fulfils the promises held out by the first, and we regret that limited space forbids mention of many articles deserving of high praise.

Part I., Diseases of the Skin, is written entirely by American authors, the names of Hyde, Hardaway, Bulkley, Van Harlingen, I. E. Atkinson, and Stelwagon being sufficient to indicate the worth of the articles. Perhaps the most admirable of these are Eczema, by Van Harlingen, and Parasitic Diseases, by Stelwagon, which are discussed in a manner peculiarly valuable to the general practitioner.

In Part II., Constitutional Diseases and Diseases of Nutrition, are found the most elaborate and interesting articles in the volume. Particularly praiseworthy are the exhaustive essays upon Scrofulosis, Tuberculosis, and Rachitis, respectively contributed by Ashby, Jacobi, and Barlow and Bury. Tuberculosis exhibits the usual broad views and extensive reading of its author, who, never content with a simple statement of others' views, invariably supplements them with his own suggestive comments. Dr. Jacobi seems to accept unhesitatingly the communicability of tuberculosis, and as a prophylactic measure insists upon the importance of sterilizing all milk given to bottle-fed children.

Rachitis is most exhaustively studied by the joint authors, who quote extensively from the work of Kassowitz, and accept his view that the essential morbid change in rickets is increased vascularization of the bone-forming tissues; certainly the most satisfactory explanation of rachitic phenomena, and with abundant evidence of truth. Though followers of Kassowitz in pathology, we are disappointed at learning that the authors have had no experience with phosphorus, the use of which, in this disease, he so strongly advocates. The last work, and not the least important, of the late Dr. Fothergill, is his contribution to this section on the Urinary Diatheses: Oxaluria, Phosphaturia, Lithuria. It is written in the well-known attractive style of its prolific author, and teems with suggestive thoughts.

In Part III., Diseases of the Respiratory Tract, we find papers on nasal diseases by Mackenzie, of Baltimore, MacCoy, Morgan, Delavan, Bosworth, and Seiler; on diseases of the pharynx by Ingalls, Robinson, and Allen; on laryngeal diseases by Sajous, Morell Mackenzie, Northrup, and Wharton. We are glad to note the important position here assigned to the upper respiratory tract, which is so constantly neglected in the management of children, to their discomfort and suffering in after years.

Excellent and clear advice is given by Dr. Northrup in his eight pages on Intubation.

Tracheotomy, by Dr. Wharton, is a most carefully prepared and elaborate essay upon the subject, more satisfactory in many respects than the somewhat similar work of Lefferts. Among the indications for operating in diphtheritic laryngitis, Wharton esteems the ability or inability of the patient to sleep. If able to sleep for a few hours at a time, he believes operation is not usually required. This doubtless is, in many cases, a valuable guide, but its value should be estimated in connection with other symptoms, and septic stupor should not be mistaken for true sleep.

Among diseases of the lungs Croupous Pneumonia is discussed by Francis Minot in an article which, though short, is full of good sense. The author decries the frequent use of aconite and quinine in this disease, believing the former dangerous, the latter worthless.

Bronchitis, by F. Gordon Morrill, is, to us, not a very satisfactory contribution, particularly in the matter of treatment, where he gives numerous conventional formulæ, some variety of syrup being the basis of each. Syrups, we believe, are abominations, interfering with digestion and thus doing more harm than good. Much the same may be said of flaxseed and slippery-elm tea, of which the author advises the administration in large quantities. We regret that no mention is made of inhalations, which with bronchitis in children have in our hands rendered excellent service. Other articles on pulmonary diseases are, Emphysema, Asthma, and Hay-fever, by Shattuck; Phthisis, by Jacobi; Pleurisy, by Whittier; Empyema, by Cabot; Diseases of the Thyroid and Thymus, by Rex, and Affections of the Mediastinum, by Edwards, all of which are good. The latter is drawn largely from Hare's Fothergillian Prize Essay, which, however, could hardly be avoided by the author, and which in no way detracts from the value of the article.

Part IV., Diseases of the Circulatory, Hæmatopoietic and Glandular Systems, is opened by DaCosta in a rather brief article, giving the impression of hurried preparation, on Functional Disorders of the Heart. Osler gives an interesting *résumé* of Congenital Affections of the Heart.

Bruce contributes excellent papers upon Enlargement of the Heart and upon Myocarditis and Cardiac Aneurism. Sansom's article on Chronic Endocarditis—Valvular Disease—will naturally be one of the first turned to by those interested in cardiac diseases, and in it they will find no cause for disappointment. This recognized authority has here written a clear and practical description of chronic endocarditis, its sequelæ, and treatment.

In Part V., Diseases of the Mouth, Tongue, and Jaws, we find articles upon Diseases and Care of the Teeth, by Darby; Congenital Defects and Deformities of the Face, Lips, Mouth, Tongue, and Jaws, by Roswell Park; Diseases of the Mouth, by Allchin; Harelip and Cleft Palate, by J. Ford Thompson; Injuries and Diseases of the Jaws, by Mears, all of which are thoroughly in keeping with the character of the volume, being clear, concise, and practical.

We cannot close this notice without reference to the illustrations, which are more numerous and of better execution than those of Volume I.

Dr. Goodell's Address before the Ontario Medical Association.—Dr. William Goodell has been requested by the Ontario Medical Association of Canada to deliver the address at the annual meeting of the Association, to be held in Toronto, June, 1890.

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SOCIETY PROCEEDINGS.

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, November 4, 1889.

THE PRESIDENT, D. HAYES AGNEW, M.D., IN THE CHAIR.

DR. THOMAS G. MORTON exhibited

SPECIMENS OF ASTRAGALUS REMOVED FOR EQUINO-VARUS,

and said that since the last meeting of the Academy he had removed the astragalus in several cases for equino-varus, the youngest patient being a child of eighteen months, who had been treated for ten months with daily massage, and under ether the feet had been thoroughly stretched, and a carefully moulded splint applied. It was impossible to bring the foot to a right angle with the leg from the presence of the astragalus, which was found to be anterior to the tibia. An incision two inches in length was made commencing back of the fibula and continued forward directly over the prominent astragalus, the posterior part of which was found to be in front of the tibia. The astragalus in both feet were excised, and the tendo-Achillis divided; perfect position was at once obtained without effort. The bones removed were so different in shape from the normal bone that they were shown to Professor Leidy, who wrote that "the two specimens of bones submitted to my examination a few days since are so altered from the normal form that I utterly failed to recognize them as being astragalus."

Dr. Morton also showed similar specimens from two other and older cases recently operated upon.

At the last meeting of the Academy the question of the condition of the ankle after the excision of the astragalus was briefly discussed; in the cases which he had had, the joint motion before operation was greatly interfered with and could not be increased from the presence of the astragalus in front of the tibia. On removing the astragalus the foot can at once be placed in a normal position and retained so without any effort, or the use of a brace, and all the cases so operated upon have required but a single dressing, generally removed about the third week. In cases where stretching and tenotomy fail, and in cases of ankle malposition, he advocates very early excision, because the immediate and complete rectification of the deformity permits better development of the limb.

DR. MORTON next reported a case of

FRACTURE OF THE LOWER END OF THE RADIUS AND ULNA.

On November 1st, a man, aged thirty-five, was admitted into the Pennsylvania Hospital with a compound depressed fracture of the skull and facial bones, having been struck by a locomotive; there was also a fracture of the lower part of the forearm with marked deformity; the patient was severely shocked, and died without reacting. The appearance of the deformity of the forearm fracture was well shown in a photograph which was presented, and the lines of fracture in the dissected specimen. There was an irregular transverse fracture of the lower end of the radius half an inch from the carpal articulation; at the outer side of the lower fragment there was also a vertical fracture extending into the joint a quarter of an inch from the ulnar attachment; the lower fragment was found above and resting upon the upper fragment, presenting the typical "silver fork" deformity of Velpeau.

DR. J. EWING MEARS then reported a case of

STAB-WOUND OF THE THORAX, INVOLVING THE PERICARDIUM, DIAPHRAGM, AND STOMACH.

On the evening of August 10, 1889, while the patient and his brother were engaged in an altercation, the latter threw at him an open penknife. The blade struck the patient upon the chest from above downward, penetrating the intercostal space between the sixth and seventh ribs and passed inward, downward, and backward, and was buried in the tissues up to the handle. It remained thus until the patient removed it some minutes later. But for some slight pain, at the time of injury, and some temporary respiratory embarrassment, he experienced no symptoms of any moment. After the removal of the knife he went home, and the wound was dressed with *isinglass plaster*. That night he slept fairly well, but the next morning noticing a protrusion from the wound he was taken to St. Agnes' Hospital. On examination at the hospital by Dr. Vincent, Resident Physician, a small piece of omentum, about one and a half inches long and three-fourths of an inch wide, protruded from the wound. The omentum presented no signs of strangulation. The patient complained of no pain, but there was some difficulty in respiration. A probe was introduced into the wound, and its direction noted to be downward, backward, and inward. The protruding omentum and surrounding tissues were washed with bichloride solution 1 : 2000, and a dry bichloride dressing applied.

On the following day Dr. Mears reduced the omental hernia and closed the wound with two deep sutures of carbolized silk and dressed it with dry bichloride gauze (1 : 1000). During the operation no pain of any moment was noted, and upon its completion the patient was ordered morphine ¼ grain at 6 P. M., and three ounces of milk every four hours.

12th. Patient felt very well, and there was but slight increase of the pulse rate; no pain and no fever. Passed a fairly good day, and about midnight had a stool, arising from his bed for that purpose, which was hard, lumpy, and caused him to strain.

13th. Felt quite well until 7 A.M., when he was given two ounces of ice water by the nurse, and soon after complained of feeling faint. A cold sweat followed; but these symptoms passed away. At 8 A.M. he was given two ounces of milk, and in fifteen minutes he complained of nausea. At 8.30 A.M. he vomited a little blood, which was dark and mixed with milk. Again he vomited, but this time about four ounces of uncoagulated bright blood, and soon after he vomited about two pints more—some bright red, but the most dark and coagulated. His pulse could scarcely be perceived, his extremities became cold, and his respiration very shallow. He was given morphiæ sulphatis hypodermically and artificial heat applied to the extremities. The fluid extract of ergot was also given, but in a few minutes he became nauseated and vomited again, the vomited matter consisting entirely of bright blood. The amount

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thrown up was about one pint. This was his last attack of vomiting, and it was about three hours before he began to react. By 6 P. M. he was in comparative comfort again.

13th. Several bloody stools were passed, each more than four ounces.

14th. Several small, bloody stools.

15th. No movement of bowels.

18th. Passage in the night; contained very little blood.

19th. Dressings removed, and wound found in good condition; no signs of inflammation; sutures removed and lips of wound held together by adhesive strips over which dry bichloride gauze and a roller were applied.

20th. Felt quite well; no pain; took food by the mouth for first time since the hæmatemesis and retained it.

21st. Troubled with slight colic but passed gas freely, and was thus relieved; bloody stools no longer present.

22d. Given an enema, and bowels moved twice; felt no pain, and stools were natural, quite copious and well formed.

30th. Dr. Mears made an examination of the wound and described it as situated between the sixth and seventh rib in the line of the left nipple one-fourth of an inch from the junction of the costal cartilage and three inches from the middle line.

The cicatrix was obliquely placed from above downward and from without inward.

The wound was entirely united. The cicatrix measured one-half an inch in length.

The foregoing history presented several points of interest with reference to the parts involved and the occurrence of the hemorrhage forty-eight hours after the receipt of the injury. The position of the wound and the direction taken by the knife-blade indicate penetration of the thoracic wall, pericardium, and diaphragm. The vomiting of blood and its passage by stool establish the fact that the wall of the stomach was incised at a point which involved section of a bloodvessel of some size. The presence of the coagulated blood in the vomited matter demonstrates the existence of hemorrhage at a time previous to the act of emesis, which was held in check by the enforced rest of the patient. Prior to the receipt of the injury the patient had indulged in copious draughts of beer, which distended the stomach and brought it into close contact with the diaphragm. The wound of the pericardium was evidently but slight and at its border of attachment to the diaphragm.

The prompt cessation of the hemorrhage under the treatment adopted justified its continuance and the withholding of operative procedures. For six days following the hæmatemesis alimentation was maintained exclusively by the rectum, beef-tea and brandy being administered at intervals of four hours. Morphine was given hypodermically night and morning in one-sixth and one-eighth grain doses. At the expiration of four weeks the patient was discharged cured.

CORRESPONDENCE.

DETROIT.

To the Editor of THE MEDICAL NEWS,

SIR: At the last regular weekly meeting of the Detroit Medical and Library Association, the President, Dr. Maclean, exhibited several very interesting pathological specimens. One, an osteo-sarcoma involving the left scapula, the entire bone being excised, and the patient, a young man, making a rapid recovery, with a very useful arm.

He also reported the case, and exhibited the specimen, of resection of the head of the humerus, from a young man, who was injured by a base-ball striking him on the right shoulder. The operation of resection was followed by a rapid and extensive development of bony material, suggesting osteo-sarcoma. The patient died in a few weeks from exhaustion.

The third specimen was a very vascular and fibrocystic tumor, unlike nævus, of the cheek, which, subsequent to removal, gave great and alarming trouble from recurrent hemorrhages. The patient is at present quite well.

An adenoma of the breast removed without interference with that gland was also exhibited from a girl, aged sixteen years. No recurrence.

The last exhibit embraced two portions of a femur, which had been operated upon for non-union after fracture associated with dislocation of the head of the same upon the dorsum ilii. The operation for non-union was not successful, and symptoms developed which necessitated amputation of the thigh. The patient recovered. The non-union in this case was attributed by the exhibitor to the very severe shock received by the bone —a heavy derrick having fallen upon it—and this he considers one to be added to the many causes for non-union in fractures.

A matter which has come to my notice affecting the medical profession is a case of gross falsifying upon the part of a medical institution.

Dr. W. E. Eggleston, in a special article on "Our Medical Colleges," published in the *Journal of the American Medical Association* for May 25, 1889—in a special edition of 75,000 copies scattered broadcast throughout the United States—endeavored to convey a true idea of the work required of students in every college in the United States and Canada.

In spite of the fact that every effort was made to get a truthful statement from each medical college—by even writing to them in several instances—I find, upon investigation, that the replies in answer to most important questions, as published, from the University of Michigan are absolutely false in eight instances.

In the first place, they claimed 800 beds at command for clinical instruction when, as a matter of fact, there were at that time 66 beds for patients and 4 more being repaired, making 70 beds in their possession, which by no error could be changed into 800.

Answers to the following questions were requested:

1. Is each student required to examine and prescribe for patients in a hospital?

2. Actual clinical work done by the student?

3. Is each student required to take a practical course in operative surgery, bandaging, and minor surgery?

4. Is each student required to practise on the manikin or living subject, or both, in obstetrical diagnosis and treatment?

5. Is each student required to examine gynecological cases and to prescribe or treat them under direction of a teacher?

6. Physical diagnosis. Is each student required to

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practise this on the living subject, under the direction of a teacher, or is he simply told how to do it?

7. In the final examination on practice of medicine, is the candidate required to diagnose the disease of a living subject, in the presence of one or more teachers and the patient, discuss the case and indicate treatment?

8. Is the same true as regards surgical examination?

9. In the final anatomy examination, is the student required to demonstrate any part of the body?

The answers published were "yes," when, as a result of investigation, it is clearly proven the replies should be "*no*".

The elasticity of the assertions published from our medical colleges is to be greatly regretted, and we are always ready to make allowances for their announcements; but when an institution, and a State institution at that, makes such direct false assertions in reply to questions put for the benefit of the medical profession, that institution is deserving of the severest censure. No words can be too harsh for such deceit.

The statement in your extract from the Ann Arbor *Courier*, in THE MEDICAL NEWS of November 23, 1889, is incorrect. Dr. Maclean was appointed to the professorship of surgery in the Michigan State University in 1872, and resigned in 1889.

The patriotic move to have the Stars and Stripes floating over our school-houses has extended itself to the Detroit College of Medicine. Recently, a beautiful flag was unfurled from the flag-staff of the above College with elaborate ceremonies on the part of the students, interspersed with college songs, cheers and a tiger.

The Detroit Board of Health has issued a circular letter to the effect that all typhoid fever cases will henceforth have to be reported to the Health Officer, according to law, but rules it "not necessary to placard the houses where such patients are sick."

ANN ARBOR.[1]

To the Editor of THE MEDICAL NEWS,

SIR: In reply to the above, the animus of which is apparent to all who are acquainted with the Medical Department of the University of Michigan, I wish to be as brief as possible. The number of beds in the hospital is 70, but it has, for a number of years, been necessary to use beds in private houses near by; and this fact must have been known to the writer of the above. The number of patients accommodated outside of the hospital was in 1881 and 1882, 498; in 1883 and 1884, 530; in 1884 and 1885, 351. The exact numbers are not given in the remaining reports, but the above may be taken as fair averages. Our Secretary answered the question, "How many beds are devoted to clinical instruction?" by the number 80, which was an under-statement and not an exaggeration. By a typographical error another cipher was added. This was so evidently an error that no one thought of correcting it. Now, in reply to the other questions:

1. Students are required to prescribe for the patients in the hospital, and this has been the practice from the time when the hospital was opened. Every operation or other case in surgery is assigned to two members of the senior class, who, under the professor or his assistant, do all the dressing and conduct the after-treatment of the case. The same general method of instruction is followed by the professor of clinical medicine and his assistant. In ophthalmology students are called upon to examine and diagnose the case. Then, if an operation is necessary, the patient is anæsthetized and a section of the class is invited to stand closely around the table, while the assistants required in the particular case are selected from the section. The after-treatment is assigned to two seniors, who are required to visit the patient twice a day. There is also practical instruction given in the use of the ophthalmoscope and the laryngoscope in a dark room.

2. This is answered above.

3. Practical courses in minor surgery and bandaging are given; if they have been omitted during any year it lies with the then professor of surgery to explain. I have before me a report given by Dr. Hendricks, assistant to the professor of surgery two years ago, in which he states that he devoted over forty hours to minor surgery, with nearly thirty hours to surgical anatomy and operations on the cadaver with the senior students of that year.

4. The students not only witness confinements, but after properly disinfecting their hands, make digital examinations during the several stages of labor. If any member of the class of '89 failed to witness a case of confinement, it was not for want of opportunity. The professor of obstetrics tells me that "every senior last year who had not had such experience elsewhere, attended a confinement in the hospital."

5. Gynecological cases are examined before sections of the class, and so far as can be done, the students make these examinations and diagnose the case.

6. Students are drilled practically in sections, daily, in auscultation and percussion. This embraces the study of both healthy and diseased organs.

7. Every senior student is required to examine, diagnose, and prescribe for patients before the professor and members of the class, and the correctness with which this is done is an important factor in deciding the vote which the student receives when he comes up for graduation.

8. Surgical examinations are required, as has been shown above. Whether or not this was done last year I cannot say. It is to be presumed that it was done. In his report to the Board of Regents in 1882, the professor stated: "Four hundred surgical cases passed through my hands during the session now closed. Of these, a large proportion was presented to the class on several different occasions, for the purpose of illustrating the different forms or phases of their ailments, and also to illustrate the effects of treatment. The dressing and after-treatment of these patients have furnished the members of the graduating class with much valuable practice." I have no reason to suppose the practice has differed in other years. After enumerating some of the operations, he says: "From this partial list it will appear that almost every department of surgery has been illustrated by characteristic cases."

9. This question, as stated by your correspondent, is somewhat indefinite; but I will say that every student must have dissected and demonstrated every part of the body before presenting himself for graduation.

[1] In view of the fact that THE MEDICAL NEWS cannot be the bearer of any news which seems to be born of misunderstanding, the following reply has been sent from the University of Michigan after reading the Detroit letter.

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Now, Mr. Editor, the answers given to the questions of Dr. Eggleston by the Secretary of the Medical Faculty of the University of Michigan were true and just. The Medical Department has been in existenee for a great many years; the graduates are numbered by thousands; they are located in every section of the country; by them the past work done here may be judged. As to the work now being done, I will say that the hospital, clinic rooms, lecture rooms, and laboratories are open for the inspection of any medical man.

C. L. FORD, *Dean.*

TREATMENT OF INFLUENZA.

To the Editor of THE MEDICAL NEWS,

SIR: As an item of interest, the quickest relief from influenza which my patients obtain is through the use of pine needle cigars and cigarettes. I find they will act as a preventative, and once the disease has instituted proceedings they act like magic. Any one can make the cigarettes. I have no hesitancy in recommending their use, as nothing is used in their manufacture but the fresh pine needle and the best of tobacco. A non-smoker can inhale with no unpleasant effect.

Yours respectfully, HARRY NEAFIE, M.D.

FREEHOLD, N. J.

OBITUARY.

DR. JAMES H. HUTCHINSON, of Philadelphia, died, after a few hours of illness, on Friday morning, December 27, 1889. Descended from a prominent physician of this city, Dr. Hutchinson inherited the love of his profession which he evidenced in his devotion both to its practice and advancement. At once one of the most learned writers and most conservative of advisers, he occupied a position representing the best admixture of progress and clearness of thought that could be turned to by the general practitioner needing a consultant, and in consequence, one of the last professional acts in his life was to go out of town to see a serious case of illness for another physician.

Dr. Hutchinson graduated in arts from the University of Pennsylvania in 1854, and, after spending a year abroad, began the study of medicine, graduating, in 1858, from the same institution which gave him the degree of A.B. He at once became resident physician to the Pennsylvania Hospital, and, after a service of eighteen months, went to France and Germany, where he devoted himself to dermatology, being part of the time under Hebra. On returning to America, he became physician to the Children's Hospital, a position which he held at the time of his death. In 1862, he was made physician to the Episcopal Hospital, where he served constantly till elected to the Pennsylvania Hospital some years later. At the time of his death he was Vice-President and Honorary Librarian to the College of Physicians, a Trustee of the University of Pennsylvania, a Director of the Philadelphia Library, a Manager of the Pennsylvania Institution for the Blind, of the University Hospital, and a Vestryman of St. James Church, showing in this way his great interest in all measures devoted to the improvement of his fellow-man. At one time Dr. Hutchinson was Secretary, then Treasurer, and finally President of the Pathological Society. His most widely known contribution to medicine is the article on typhoid fever in Pepper's *System of Medicine*, which has been universally recognized as one of the most masterly studies of the disease extant.

The following resolutions, passed by the College of Physicians at a special meeting, are indicative of the admiration of his professional brethren:

"The College of Physicians of Philadelphia has heard with profound regret of the death, after only a few hours' illness, of its Vice-President, Dr. James H. Hutchinson, and hereby records its profound sense of the loss—to human eyes irreparable—thus occasioned, not alone to its own body, but as well to the whole medical profession of the city and vicinity, and to the entire community.

"Still in the prime of life, with skill and knowledge broadened and confirmed by wide and ever-growing experience, Dr. Hutchinson shone prominent both as a faithful and trusted family physician, and as a consultant whose advice and assistance were largely sought for and highly prized by his fellow-practitioners, all of whom recognized both the value of his counsel and the uniform candor and conscientious honesty with which it was bestowed.

"A Fellow of this College for more than a quarter of a century, he served it in council and committee-room with a zeal and fidelity which are amply witnessed by its transactions and by the records of its library, and which but met with its just recognition in his unanimous election to the honorable office of Vice-President.

"A scholarly and accomplished writer, an able clinical teacher, a skilful and judicious practitioner, well exemplifying the highest and best type of the practical physician; a high-minded, honorable Christian gentleman, tried and true in all the various relations of an active, busy life—his death leaves a gap which can never be filled; a precious memory which will endure long after those who now grieve for him shall themselves have passed away forever."

NEWS ITEMS.

St. Luke's Hospital Fund.—St. Luke's Hospital, New York, is endeavoring to raise $50,000 to pay its indebtedness. Part of the money, $34,000, is due the treasurer for funds advanced by him to the institution. This indebtedness has been increased by the growing demands on the hospital. About $37,000 has already been secured, and it is hoped to obtain the rest before many weeks. The hospital receives no aid from the city.

Obituary.—Dr. Charles H. Nichols, the Superintendent of the Bloomingdale Insane Asylum, died at his home, on the asylum grounds, December 16th. Dr. Nichols spent last summer in Europe studying the management and construction of foreign asylums, and since then has been in failing health. He was graduated from the University of New York and from the University of Pennsylvania in 1843. Since the latter date he has devoted himself to the care of the insane. In 1852 he was appointed by President Fillmore to superintend the construction of the Government Hospital for the Insane, resigning his position at the Bloomingdale Asylum for that purpose. In 1877 he again assumed the management of the latter institution.

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Dr. David Prince, one of the oldest and most successful surgeons of Jacksonville, Illinois, died on December 19th from pneumonia. Dr. Prince had twice been a delegate to the International Medical Congress.

Fatal Result of Extension in Locomotor Ataxia.—Another fatal result from extension for locomotor ataxia has been reported by Dr. C. Bosari, of Modena. At first the treatment appeared to reduce the ataxic symptoms, but a leptomeningitis supervened followed by death. Dr. Bosari is not clear in his own mind concerning the causal relation of extension to the unfortunate results.

Faith-healers Heavily Fined.—The "new evangelists," as the Scandinavian sect of the faith-healing believers is called, have been heavily fined, in Brooklyn, for disobedience of the laws and ordinances governing the treatment of minors sick with contagious disease. Three persons, on four charges, were called upon for $450 in fines, or to go to jail. Some have accepted the latter alternative, and others say that they will follow rather than give their children medicine or observe the isolation orders of the Board of Health. In regard to contagious diseases, these people act on the principle that if "the Lord" causes a disease to be of a communicable nature, it is right that it should spread, and that if children die from such diseases, "the Lord is simply taking home his own."

A Courageous Ambulance Surgeon.—Ambulance Surgeon Mead, of St. Mary's Hospital, Brooklyn, was called to an elevated road accident, and found that the mangled, yet conscious, patient, had fallen and been caught under a locomotive. The surgeon administered a hypodermic to the injured man before the latter had been disentangled from the track, and while the two, surgeon and patient, were lying beneath the fire-box of the engine.

Medico-legal Society of New York.—Two interesting and important papers were read before the Medico-legal Society, on December 18, 1889, one by Clark Bell, on "Hypnotism;" the other by Charles G. Garrison, Justice of the Supreme Court of New Jersey, on "The Province of Medical Expertism." Mr. Bell held that the medical profession in America does not give hypnotism the attention its importance deserves. Judge Garrison, in speaking of "Medical Expertism," analyzed the legal and medical minds, and showed that they proceeded in radically different ways.

It was the annual meeting of the Society, and the following officers were elected: President, Clark Bell; First Vice-President, Dr. W. W. Godding; Second Vice-President, Albert Bach; Secretary, Emily Kempin; Assistant Secretary, Dr. William L. Baner; Corresponding Secretary, Moritz Ellinger; Treasurer, E. W. Chamberlain; Librarian, Benno Loewy; Assistant Librarian, Dr. G. Bettini de Moise; Curator and Pathologist, Dr. Frederick Peterson; Chemist, Professor H. A. Mott, Jr.; Trustees, W. G. Davies, Dr. Frank H. Ingram, E. W. Chamberlain; Permanent Commission, Judge C. G. Garrison, Professor F. D. Weisse.

The annual banquet of the Society was held in the evening at the Marlborough Hotel.

Sterilized Milk for Sale.—It is stated that some of the druggists of Leipzig have arranged to prepare sterilized milk, after the method of Soxhelt, and dispense it like other articles.

The Polyclinic Medical Society.—The Polyclinic Medical Society gives, under its auspices, a lecture, or holds a meeting of its Therapeutical Section, every Tuesday evening at 8 o'clock, at the College Building, N. W. corner of Broad and Lombard Streets, during the season. The lecture pertains to subjects of a clinical and scientific character, and its monthly meetings will be devoted to the physiological and practical investigation of therapeutic agents. The whole course is free to members of the profession and to medical students. The following lectures and meetings are announced for 1890:

January 7th, Dr. Alexander MacCoy, The Clinical Features of Tuberculosis of the Larynx.

January 14th, Dr. B. F. Baer, Abdominal Surgery.

January 21st, Dr. Thomas G. Morton, Modern Treatment of Club-foot.

January 28th, Meeting of the Therapeutical Section.

February 4th, Dr. Edward P. Davis, Use of the Obstetric Forceps.

February 11th, Dr. John B. Roberts, The Anatomy of Facial Expression.

February 18th, Dr. J. Henry C. Simes, Prostatorrhœa.

February 25th, Meeting of the Therapeutical Section.

March 4th, Dr. R. W. Seiss, Inflammation of the Eustachian Tube.

Homœopathy in New York City.—A contention has arisen between the two wings of the homœopaths in New York City for the control of the hospital on Ward's Island—a city institution. The "liberals," or "renegades," are in possession, while the "ultras" are out, and are trying to get in. The orthodox party appear to be supported by their County Society, while the heretics have the leading journal on their side. The editor of the latter, Dr. Egbert Guernsey, is quoted as saying that since the death of Dr. Bayard there has not been in New York a genuine homœopathic practitioner; and that even his opponents do not hesitale to prescribe drugs regardless of the so-called "science of homœopathy."

The British Pharmacopœia.—The General Medical Council of Great Britain has directed the publication of an *Addendum* to the *Pharmacopœia* of 1885. The *British Medical Journal* of December 7th states that it will contain only remedies of undoubted value which have come into use during the last four years. Dr. Attfield will have the principal responsibility in the work, but will be assisted by Dr. Quain, Sir Dyce Duckworth, and Mr. Carter. The *Addendum* will appear in 1890.

Investigation of Electrical Execution in France.—The medical section of the French Academy of Sciences will investigate the subject of execution by electricity. The inquiry will be aided by the expert electrician, Marcel-Desprez. The visit of the American inventor, Edison, and his presentation before the Academy of his views concerning the painless and instantaneous extinction of life by electricity, have been the incentives to this investigation.

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The Fire in the Presbyterian Hospital, New York.—The Presbyterian Hospital of New York City suffered by fire, December 19th, and the patients were safely removed. One very ill woman has since died, whose end may have been hastened by the accident. The fire took place in the north wing of the hospital, which was damaged, according to the estimates of the Trustees, to the extent of about $100,000. It is reported that the elevator would not work, and that no water would flow through the fire-hose with which the wards were provided. If the institution had been more crowded than it was, or if the fire had occurred later in the night, it is extremely probably that great loss of life would have ensued. The moral is that no hospital or public institution should omit to have a regular testing of its fire apparatus and escapes; or when they get out of order to double the night-watch and every other customary precaution.

The Pauper Insane of New York —The New York Charities Aid Association recently held its anniversary meeting. Dr. C. F. Chandler, formerly President of the Health Board, was reëlected presiding officer. The object of the Society this winter will be the reintroduction of the bill to remove the pauper insane from the various county poor-houses and place them in the hospitals to be supported by the State. The Supervisors of the Poor united last year to oppose this measure, and secured its defeat by a small vote. The principal medical societies throughout the State have approved the bill that was defeated last year, or some equivalent measure that will place the insane poor in State hospitals for the insane.

The Hoagland Laboratory. — An announcement by the Trustees of the Hoagland Laboratory, of Brooklyn, has been received, which shows that it is organized for practical laboratory work in bacteriology, physiology, histology, and pathology. A moderate fee will be charged to students who desire to take a full course in some special branch. To the medical profession, however, the advantages of the Laboratory are available almost free of charge, with the exception that when animals are required in any experimentation they must be supplied or paid for by the investigator. All the best foreign journals of laboratory research are in the library.

Growth of Medical Photography.—The uses of photography in medicine are increasing. There are amateur photographers on the staff of a large number of the London hospitals whose prints are in great demand in the surgical wards. The improvements that are now being made in the Royal College of Surgeons include rooms for photography. The President of the College, Mr. Hutchinson, referred to this department in his remarks at the late annual meeting as becoming more and more important in surgical case-reporting.

"Vita Nuova" a Cocaine Preparation. — The "Vita Nuova," of Mrs. Harriet Hubbard Ayer, is said by the *Druggists' Circular* to be a preparation of cocaine, as dangerous as it is pleasant to the taste. The same journal criticises the prominent men and women who have publicly endorsed this much advertised nostrum, when probably, at the most, they have not used more than a single bottle of the stuff. In cases where the use of it has been continued for any length of time, "a testimonial from any such person would be about as valuable as that of a morphine maniac testifying to the beneficial effects of the drug which had enslaved him."

Scarcity of Physicians in Austria.—It is stated that in consequence of the scarcity of medical men in some parts of Austria, an order has been issued by the Minister of Education that men recently qualified who have come from these localities must return to their homes to practise for a certain number of years, unless they are fortunate enough to obtain some Government post elsewhere.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 17 TO DECEMBER 30, 1889.

By direction of the Secretary of War, CHARLES T. ALEXANDER, *Lieutenant-Colonel and Surgeon*, will be relieved from duty as Medical Director Department of the Columbia, on receipt of this order at the headquarters of that Department, and will report in person to the commanding general Division of the Atlantic, for the purpose of preparing for, and becoming familiar with, the duties of Attending Surgeon in New York City. He will also, upon his arrival in New York, assume the duty of Examiner of Recruits in that city. William E. Waters, Major and Surgeon, will take temporary charge of the office of Medical Director Department of the Columbia, upon the relief of Lieutenant-Colonel Alexander, and perform the duties pertaining thereto.—*S. O. 291, A. G. O., Washington*, December 14, 1889.

With the approval of the Secretary of War, the leave of absence granted C. N. B. MACAULEY, *Captain and Assistant Surgeon*, in S. O. 166, Department of the Missouri, November 8th, is extended one month.—Par. 10, *S. O. 294, A. G. O.*, December 18, 1889.

MCCREERY, GEORGE, *Captain and Assistant Surgeon* (Fort Warren, Massachusetts).—Is granted leave of absence for one month, to take effect upon the arrival at that post, for temporary duty, of Samuel Q. Robinson, Captain and Assistant Surgeon.—Par. 6, *S. O. 289, Division of the Atlantic*, December 18, 1889.

ROBINSON, SAMUEL Q., *Captain and Assistant Surgeon* (Fort Hamilton, New York Harbor) —Will proceed, without delay, to Fort Warren, Massachusetts, and report to the post commander for temporary duty.—Par. 5, *S. O. 289, Division of the Atlantic*, December 18, 1889.

By direction of the Secretary of War, PAUL R. BROWN, *Captain and Assistant Surgeon*, now at Trinidad, Colorado, will report in person to the surgeon in charge of the Army and Navy General Hospital, Hot Springs, Arkansas, for admission to, and treatment in the Hospital.—Par. 16, *S. O. 296, A. G. O.*, December 20, 1889.

DEWITT, CALVIN, *Major and Surgeon* (Fort Missoula, Montana Territory).—Is granted leave of absence for one month, to take effect not later than January 1, 1890, with permission to apply to Division Headquarters for an extension to include February 27, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING DECEMBER 28, 1889.

STONE, E. P., *Passed Assistant Surgeon.*—Ordered to the "Independence," Mare Island, California.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVI. SATURDAY, JANUARY 11, 1890. No 2.

ORIGINAL LECTURES.

OVARIOTOMY AND OTHER CASES.

A Clinical Lecture,
Delivered at the Rush Medical College, Chicago, Ill.

BY CHARLES T. PARKES, M.D.,
PROFESSOR OF SURGERY.

[Reported by A. J. OCHSNER, M.D., Chief of Surgical Clinic.]

OVARIOTOMY.

GENTLEMEN: This case is a German girl, aged nineteen years. She is fairly nourished, though rather slight, and with the abdomen enormously distended. She weighs 120 pounds.

Here we have a case showing the development of a large growth in the abdominal cavity, many examples of which we have lately had before us.

I hope you have become impressed with their grave character, and that you will not do anything with them until you have eliminated, as far as possible, the risks of a mistaken diagnosis.

The tumor is everywhere smooth and even. It is prominent, and does not flatten when the patient lies on her back or in any other position. Vaginal examination shows that there is a hard, unyielding mass extending across the pelvis, and as I feel the surface I notice neither roughness nor irregularities. Placing a hand against one side of the prominent abdomen and tapping it on the opposite side with the finger, I feel fluctuation transmitted to the hand. As this can come only through a fluid, I therefore conclude that it is either free fluid in the abdominal cavity termed ascites, or a large cyst with thin walls.

Careful examination has enabled us to eliminate disease of the liver, heart, and kidneys. There has been no œdema or anasarca present at any time. Hence we exclude ascites and are forced, by exclusion and other facts, to the supposition that this is an ovarian cyst. Moreover, this patient has been tapped five times, as much as thirty pints of fluid being drawn with each tapping; in this case doing no injury to the patient. The first time she was tapped the fluid withdrawn was clear, the next, it was darker, and the last time it had the color of beer or coffee. Ascitic fluid is always clear. One danger attending the tapping of such cysts is the introduction of septic material into the abdominal cavity. This may occur either by the instruments used, or by the fluid from the cyst. There is no excuse for the first, and you can often avoid the harmful effects of the contents of the cyst by being sure that the sac is perfectly empty before removing the trocar.

Proceeding with the operation, you notice that I am very careful in dividing the peritoneum, for I do not know the extent of the attachment of the tumor to the abdominal wall, and do not wish to open the sac.

You can see the blue shining appearance of the sac which is characteristic of such tumors. Just here, near the opening into the peritoneum, I find an adhesion which firmly joins the cyst wall to the peritoneum, and the division of which would have made the opening into the cyst cavity instead of into the abdominal cavity. Having enlarged the opening through the peritoneum to the same size as that in the abdominal walls, exposing the sac freely, I now thrust this large trocar into it, choosing a non-vascular portion for its introduction. The fluid from the cyst flows freely, as you notice, but slowly. It is very thick and is cream-colored, looking like pus. If it proves to be pus, there is no doubt that infection came from the trocar needle used in tapping it. Very likely this resemblance to pus will prove to be dependent upon the presence of a fatty substance found in dermoid cysts.

We must not hurry the emptying of the sac, but give it plenty of time and let it empty slowly. Remember that you should not push the ether while you are emptying the cavity, because the sudden release of pressure may so disturb the circulation that the patient in profound anæsthesia may be unable to rally from its depression.

The diagnosis which I have made that this is a dermoid cyst seems to be correct. You see these adhesions: always strip them up so as to break the vessels as far from the base of the adhesion as possible.

In the separation of the adhesions you may use the finger, the scissors, or the knife. The best way is, if they are soft and recent, to sponge them off; if they are stronger, strip them off with the finger; and if they are broad and thick or vascular, you must include them between two ligatures and cut between these. Here, you see, is a large adhesion of the omentum. These others I do not care much about, for they are not very vascular; but this one is quite vascular, and must be tied. I think I shall be able to show you something interesting in this tumor when we open it, for there was a large, hard, bony mass just across the pelvis, plainly felt during vaginal examination. Nothing but a dermoid tumor has such growths in it.

The cases of ovarian tumors I have shown you thus far this month illustrate the differences in abdominal adhesions. The first case had no adhesions; the second, one or two; and this one has practically any number. In perforating the pedicle you must choose the part with the least vascularity. This can be done very easily with the aid of the eye. You do this so that the point of the needle in passing through will not open a vessel that will subsequently bleed. If you use the clamp, never tie the ligature until the clamp is removed, then there will be no danger of the ligature slipping off. I have the pelvis well open before me, and can see that the opposite ovary is perfectly normal. In closing the abdominal cavity, be sure to bring the surfaces together carefully, but do not draw the stitches too tightly.

The interior of the cyst contains a substance which

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feels like bone, and is shaped like a lower jaw. In many of these cases the cyst contains bone or other substances, such as teeth and hair. There is a case reported of a dermoid cyst containing nearly 200 teeth. Now, this is what I felt through the vagina.

In order that the patient shall not suffer from the removal of the great weight of the tumor from the abdomen, we will equalize the pressure in a measure by placing a large bunch of cotton on the abdomen and holding it there by means of a bandage.

[NOTE.—A dissection of the tumor showed a bony mass resembling in size and form the bones of one-half of an adult's face, including a portion of the frontal, the malar, and the superior and inferior maxillary bones, the latter bearing partly developed teeth. Progress of recovery normal. Removed stitches on the eighth day, and wound found united. Patient was out of bed two weeks after the operation, and a week later she was able to walk about.]

THORACIC TUMOR.

I now bring before you a woman, aged twenty-four years, who has a tumor on the right side just below the mamma.

I find that she has a good deal of pain, and that she has become somewhat emaciated. Two years ago she was thrown from a horse and had a rib fractured; since that time this tumor has been growing. I am certain that it is a tumor which had best be let alone. The veins on the surface are very much enlarged, and you have already learned that tumors with this peculiarity are usually not very favorable for operation. The exploring needle, you see, does not tell us anything, so we will make an incision. I make this incision slowly, because I do not know what is under my knife. The tumor slides up and down beneath the chest walls. It is so extremely vascular, and in such a position, that we had better not make any further attempt to remove it.

TALIPES EQUINO-VARUS.

You have seen me operate upon so many of these cases that it is scarcely worth while to describe the operation again. This is a case of talipes varus; the toes turn inward. The tendo Achillis is contracted, and the boy walks on the side of the foot. To-day we shall break down the tarsal bones as much as possible, without breaking through the skin. The deformity has been years in reaching its present condition, and you cannot expect it to be cured at once. We will break it down and put in in a plaster cast in the corrected position, letting it remain for one week. Then we repeat this operation until the normal position of the foot is reached. If you listen, you will hear the bones and ligaments break. I very seldom use the knife in these cases, as you know. Having attained a perfect position of the foot, it is necessary to have the patient wear a cast for about a year in order to secure a permanent transformation of the tarsal bones. The patient can walk in his casts without pain or inconvenience.

The next case is a four-year-old brother of the last patient, and has the same deformity. There is nothing hereditary in the deformity, as both parents and five other brothers are well formed. I operate as in the previous case. This method looks cruel, but in my opinion it is by far the best, cheapest, quickest, and surest way of curing club-foot.

NÆVUS OF FACE.

This little boy, aged two years, has, as you see, a small growth near the superior internal angle of the orbit. It is a nævus. I shall remove it by seizing the growth with the forceps, lift it up and clip it off. A little compression will stop the hemorrhage, and then we will apply an iodoform gauze dressing.

NASAL POLYPI.

In this man's nose I can see a growth forcing its way to the anterior nares. He is unable to breathe through either nostril, and you notice as he speaks his voice has a muffled sound. He is suffering from nasal polypi, which are myxomatous growths developing usually from the mucous membrane covering the turbinated bones and, as they grow, hanging into and occluding the nasal fossa. We will remove them by means of this pair of forceps, which are introduced along the septum of the nose, then opened so as to include the growth, and carried up to its base, which is grasped firmly and the polypus twisted off and withdrawn. This is a case where there are a half dozen nasal polypi hanging in a bunch like grapes to their stem. You see we have removed this large one very easily.

CYST OF THYROID GLAND.

This lady, as you see, has a tumor on the neck in the region of the sterno-cleido-mastoid muscle. It is smooth, even and symmetrical, moving with the larynx when she takes a drink. It is a unilateral cystic growth of the thyroid gland. We will introduce the exploring needle and confirm the diagnosis. I get a chocolate-colored, clear serum. The tumor is partially cystic. We will inject it once a week with a five per cent. solution of carbolic acid. This is a simple method, and often followed by cure.

HYPOSPADIAS.

This little boy, aged six years, has the deformity of hypospadias. In this case it can easily be cured by making a transverse cut, separating the fibres holding the penis down, then sewing the opening longitudinally. It is not necessary in this case to interfere with the urethra.

[NOTE. There was much œdema of the prepuce after the operation and severe pain, but elevating the organ and applying hot boric acid fomentations caused this to subside. The organ has been lengthened 1½ inches, and the downward curve has been corrected.]

OSTEOMYELITIS.

The next patient is a man, aged twenty-seven years, who has a suspicious-looking sinus on the inner side of the thigh just above the knee. It looks very much like the external opening of a sinus leading to a localized osteomyelitis. The patient has chosen rather an unfortunate time for coming, as the sinus is apparently closed. We will open it and examine. I am pretty well satisfied that there is a piece of denuded bone somewhere, but I am unable to find it just now. It is a bad plan to open the sinus with the knife, until you have found the bone. We infer that the disease is moderate in extent, and that this is the reason why the bone is hard to find. The pa-

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tient breathes badly. Always pay strict attention to your patient under the influence of an anæsthetic. Let your ears be open to every sound, if your eyes are otherwise engaged. You are responsible for what happens to the patient. I shall open this sinus moderately, hoping a little later to find the track leading to the bone. I may not be able to find the bone to-day. Operating in this location requires great care, because of the large blood-vessels in close proximity to the wound. Patience has its own reward—I have found the denuded bone. I have said that this is a circumscribed disease. There has been no involucrum formed. Now my finger rests in a perfectly smooth cavity, and I have no doubt that the patient will get well. I should have abandoned the case for to-day if I had not reached the surface of the denuded bone. Sometimes when these fragments are small they are hard to find, but you should not give up the search.

You will have noticed that we do not use antiseptic fluids except when we have a septic wound, then we irrigate thoroughly with boric acid or other antiseptic solution. The sinus is curetted and the wound packed with iodoform gauze.

[NOTE. The wound healed rapidly, having been transformed into an aseptic wound. About three weeks after the operation the patient returned to his home, the wound being entirely healed.]

TUMOR OF THE FEMUR.

This young man has been before us twice; his thighs are unequal in size. The right thigh is larger than the left, and symmetrical in its muscular development; the left unevenly enlarged a little above the middle. It is tense and hard to the touch, and the muscular tissue seems wasted. I can make nothing out of it but hypertrophy of the femur. I was at first greatly disposed to believe it to be a malignant trouble. All the appearances pointed to sarcoma, but from the healthy appearance of the man I now think it doubtful. He has been taking iodide of potash and is improving, so I will ask him to go on with the treatment and report again.

EMPYEMA.

This young man received a stab-wound five weeks ago, and was brought to us last night. He is very ill, has great pain and a high temperature, and has lost much flesh. There is some bulging of the chest above and behind the stab-wound, which is between the eighth and ninth ribs, just in front of the axillary line, on the left side. The pus flows freely at every expiration through the wound, which had been closed with a stitch at the time of the injury. The blood from the wound might have filled the cavity of the chest without any further trouble, provided the pus microbe had not been introduced into the cavity. This is simply an abscess, an empyema. If the accumulation of pus had been elsewhere in the body, perhaps it would have been treated without timidity by free incision.

This incision which you now see me make through the tissues and down to and through the sixth intercostal space in the line of the angle of the scapula into the chest cavity should have been made weeks ago.

The pus is now escaping freely, and has a most disagreeable odor. Whenever and wherever you find a large accumulation of pus, open it freely. This cavity will be washed out very thoroughly once or twice with a saturated solution of boric acid, and later with hot water. Two large rubber drainage-tubes are drawn through the cavity and left to protrude through both openings, to insure free drainage. A large iodoform gauze and borated cotton dressing is applied. The cavity is to be irrigated daily with a large quantity of pure, hot water until his temperature approaches normal.

[NOTE. During three days following the operation, the temperature fell from 104° F. to normal, and all septic symptoms subsided. Irrigation was discontinued and the patient continued to convalesce, being nearly well on November 14th.]

ORIGINAL ARTICLES.

A CASE OF INGUINAL COLOTOMY FOR CARCINOMA OF THE RECTUM.

BY H. R. WHARTON, M.D.,
DEMONSTRATOR OF SURGERY IN THE UNIVERSITY OF PENNSYLVANIA; SURGEON TO THE CHILDREN'S HOSPITAL; ASSISTANT SURGEON TO THE HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA.

MISS E——, aged forty-eight years, had for some months been troubled with constipation, but had never suffered from pain in the rectum or noticed any discharge of blood or mucus with the stools. I saw her in May, 1889, when she had a more than usually obstinate attack of constipation; and at this time I made an examination of the rectum, but did not discover the presence of any growth or strictures. By the use of laxatives and enemata the constipation was overcome and she had no further trouble until June 10th, when I was called to see her again, and found her suffering from an attack of constipation very similar to the one in which I had seen her before. This attack persisted for some days in spite of treatment, and she soon developed symptoms of obstruction of the bowels; the belly gradually became swollen and tender, and she complained of abdominal pain, but there was no vomiting. I again made a rectal examination, and with the tip of my index-finger I could feel a mass of indurated tissue far up in the rectum, occluding the gut. As the symptoms of obstruction of the bowels were becoming urgent the question of an operation was suggested. Professor Ashhurst kindly saw the patient with me, and after etherizing her I attempted without success to pass a rectal bougie. I now determined to open the descending colon or sigmoid flexure of the colon in the left iliac region, and decided upon the method suggested and practised by Ball, which consists in making an incision in the line of the *linea semilunaris* about three inches in length, with its lower limit just short of Poupart's ligament. This incision was accordingly made, the tissues of the abdominal wall were divided and the parietal peritoneum was exposed and opened, the distended gut presenting itself in the wound; but before this was secured to the edges of the wound the parietal peritoneum was stitched to the skin throughout the wound by fine silk sutures. The presenting gut, which was found to be the upper portion of the sigmoid flexure of the colon, was next drawn well

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downward and secured to the edges of the wound by a number of silk sutures, the peritoneal surface of the gut being held in contact with the parietal peritoneum by this means. The distended bowel was next opened by an incision about an inch in length, when a large quantity of semi-fluid fæces and flatus escaped. After the wound had been cleansed of fæces the edges of the intestinal wound were stitched to the skin by a few silk sutures. The wound was next freely dusted with iodoform; a few layers of carbolized gauze were then applied, and a pad of bichloride cotton was placed over this, and the dressing was held in position by an abdominal binder. The patient had a number of copious passages during the next twenty-four hours, and was entirely relieved of her pain and discomfort, and presented no unfavorable symptoms. At the end of the eighth day the sutures were removed and the adhesion of the gut to the abdominal wound seemed perfectly firm. At the end of two weeks the patient was allowed to be out of her bed, and in a short time was able to go about the house and even out of doors. She had a free fæcal movement each morning, and was not often disturbed again during the next twenty-four hours by the escape of fæcal matter, but suffered annoyance from the escape of flatus. After the first week she passed some thin fæcal matter mixed with blood from the anus, and it was found advisable to use an enema of a weak solution of permanganate of potassium occasionally. I saw her frequently, and found her condition as described above. A careful examination of the artificial anus showed no tendency to prolapse of the bowel. The patient continued in a comfortable condition until August 17th—about two weeks after the operation—when she noticed that no fæcal matter escaped from the artificial anus. I saw her upon the following day, and found that the belly was slightly swollen and that she complained of pain in the right iliac region. I introduced my finger into the artificial anus to ascertain if the bowel was occluded by a mass of inspissated fæcal matter, but I found it perfectly clear as far as I could explore it with the finger and a soft catheter. I was called to see the patient on the evening of August 18th, and found her in collapse, and she died in this condition early on the morning of August 19th.

Examination of the region of operation after death showed that the adhesion of the colon to the abdominal wound was firm, the lower portion of the sigmoid flexure, occupied by a carcinomatous growth, was found displaced to the right side of the body, occupying almost the entire right iliac region, and the growth and a number of coils of the small intestine were matted together. At one point the small intestine was opened by ulceration, permitting the escape of fæcal matter into the abdominal cavity.

REMARKS.—In the above case the result of the operation was most satisfactory, both as regards the immediate relief of the symptoms of obstruction of the bowel, and the comfort of the patient, until a new point of obstruction developed by reason of the extension of the growth, which was followed by perforating ulceration of the intestine and a rapidly fatal issue.

Carcinoma of the rectum sooner or later, in the vast majority of cases, leads to stricture of that organ and to the development of symptoms of intestinal obstruction. If, by reason of the situation or extent of the growth, the case is unsuitable for the operation of excision of the rectum or for linear rectotomy, the operative treatment of the affection consists in the performance of either lumbar or inguinal colotomy.

Colotomy relieves the symptoms of obstruction of the bowels, and generally keeps the patient in a comfortable condition until death results from other causes. The influence of the operation in retarding the growth of the disease in the rectum is a question upon which different observers are not fully agreed; some surgeons of large experience in this operation are decidedly of the opinion that following the operation there is a marked retardation of the increase of the rectal growth.

The operation is also in many cases delayed too long; it should be performed before the obstructive symptoms become too urgent, as the immediate risk of the operative procedure is diminished by operating at this time, and there is then an opportunity to delay the opening of the bowel for twenty-four or forty-eight hours, until it has had time to acquire firm adhesion to the abdominal walls, thereby diminishing the chance of fæcal extravasation.

Inguinal or iliac colotomy is the operation which at the present time meets with most favor, and it has the advantage over lumbar colotomy that, by its employment, the bowel is more easily found and the resulting artificial anus is in such a position that the patient cares for himself more readily. In the inguinal operation, moreover, the surgeon can more readily close the lower portion of the bowel if he considers it better to make the artificial anus a terminus instead of a lateral outlet to the bowel.

Prolapse of the bowel is said to be more common after inguinal colotomy than after the lumbar operation, and as this is a condition which causes the patient much discomfort, it should be guarded against at the time of operation by drawing the upper portion of the loop as far down as possible before it is fixed to the abdominal wound.

This is, I think. more important where the operation is done in a case of fibrous stricture of the rectum where the patient's expectation of life is good, than where the procedure is adopted in a far advanced case of malignant disease where colotomy can only be considered at least a palliative procedure.

The tendency to prolapse of the bowel in inguinal colotomy depends directly upon the variable length of the sigmoid mesocolon.

Mr. H. Allingham, to overcome the tendency to

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prolapse of the bowel through the artificial anus, recommends the drawing out through the wound of both the upper and lower portion of the bowel until the mesocolon becomes tense; he then passes sutures through the mesocolon and the muscular and serous coats of the bowel to prevent its slipping back. He next applies a clamp with spikes to hold the bowel in this position, which is allowed to remain from twelve to seventy-two hours, according to the urgency of the case; the gut above the clamp is cut off, and if when the clamp is loosened there is no bleeding it is removed permanently. The amount of intestine cut off in some of Mr. Allingham's cases has been as much as twelve inches. I think the incision recommended by Ball, which was the one employed in the previously reported case, is the best one to make use of in inguinal or iliac colotomy. It is an incision about four inches long in the line of the left *linea semilunaris*, which exposes the sigmoid flexure freely and is made at a point where the parietes are thin and no vessels of importance are injured. Whether it is advisable to make the artificial anus a terminus of the gut, by closing the lower portion, will depend upon the conditions which are presented when the abdominal cavity is opened and the gut exposed; if the rectal growth is high up, so that the bowel can be emptied, and if it does not contain much discharge from the growth itself, it is well to empty it and close it after securing the upper extremity of the gut to the abdominal wound. In other cases where there is difficulty in emptying the lower portion of the gut, or where there is free discharge from the growth into the gut, it is better to be satisfied to have the artificial anus act as a lateral outlet to the bowel, as the lower portion of the gut can then be washed out out with some disinfectant solution, if required.

It not infrequently happens, even in cases where the obstruction of the bowels was absolute before colotomy was performed, that the rectum below the growth becomes distended with thin fecal matter and discharge from the growth; this is generally noticed a few days after the operation, and it causes the patient much discomfort and gives rise to a very offensive odor; this condition is best overcome by using, daily, a rectal injection of a weak solution of permanganate of potassium as long as any discomfort is experienced.

HYSTERICAL BLINDNESS OF TEN YEARS' DURATION IN A HEALTHY MALE SUBJECT.[1]

BY GEORGE C. HARLAN, M.D.,
OF PHILADELPHIA.

SIXTEEN years ago I reported several cases of hysterical amblyopia under the head of "Simulated Amaurosis" (*American Journal of the Medical Sciences*, October, 1873), and since then have chanced to meet with a number of cases, some of which have been published from time to time. The subject has been discussed so frequently of late years in journals and lectures and works upon the nervous system, that the excuse for reporting such cases as a warning to be on the lookout for their possible occurrence in female patients no longer exists. The same cannot yet be said where male subjects are concerned, and perhaps it is still in order to remind the profession that this strange psychical whim, or whatever it is, is not altogether confined to the more irresponsible nervous organization of the gentler sex. In one of my first cases the patient was a male, and the following is the report of his case:

A rather delicate-looking boy, æt. eleven years, was represented to have become blind in the right eye about eighteen months before. After the disease had resisted the skill of the family physician for some months, the patient's father was recommended to "try electricity," and took him to a "professor" of that science. The result of one application was an entire restoration of vision. The cure lasted, however, only for a few weeks, when the remedy was resorted to again, with the same result. After this history had repeated itself a number of times, the father, as a measure of economy, invested in an apparatus of his own, and wound up his son's vision as often as it ran down.

When brought to the Wills Hospital, the boy asserted that the eye was not conscious of the ophthalmoscopic examination, which, however, revealed nothing to account for the loss of sight. When a prism was placed before the left eye he admitted seeing two images of the gas-jet, which could easily be distinguished by a colored glass or made to unite by a corrective squint when the base of the prism was held outward. He was required to read with the prism still before the eye, and while he was disconcerted and thrown off his guard by being urged to read rapidly, a fold of paper was slipped in front of the left eye and he continued to read with the right. The father was quite sure that there was no motive for the deception. The fact that the boy's mother was blind in the right eye was a singular coincidence, and, perhaps, may have had a psychological bearing in the case.

About the same time I met with the report of a case by Galezowski, of Paris, in which the patient was also a boy, eleven years of age. Galezowski considered it a plain case of malingering; and in my own report I spoke of the pretended blindness as a deception. What I have since seen in other cases convinces me that we both may have been wrong, and raises a strong doubt in my mind whether either of these patients could have seen by conscious effort with the eye supposed to be blind.

No other instances of this affection occurring in males have come to my knowledge until Dr. William A. Moore reported three cases at the last meeting

[1] Read before the American Ophthalmological Society.

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of the American Ophthalmological Society, and Dr. Edward Jackson referred to one that had recently occurred in his practice. Another has since been reported (*New York Medical Journal*, February 9, 1889) by Dr. Marlow. The following case presents several points of interest other than the sex of the patient:

A tall, well-developed man, twenty-two years of age, a clerk in a railroad office, living some distance from Philadelphia, came to me in March last with the following history: Ten years ago, while walking in the street, he was struck on the right eye with a stone thrown by a boy. Considerable pain and inflammation followed the injury, and the sight of the eye was lost. He was for several months under the care of a well-known ophthalmic surgeon, and finally discharged as incurable from supposed paralysis of the optic nerve. His eyes had since been a constant source of anxiety to his parents, and had proved a serious interruption to his education. He had recently suffered considerable eye-strain and frontal headache after work at his desk, which had occasioned him much uneasiness, particularly as his family physician had assured him that it might be necessary to have the blind eye removed to save the other one. Under these circumstances he came to Philadelphia for special treatment, quite ready to submit to enucleation if it should be advised.

In the left eye V. $= \frac{20}{XX}$, and no manifest hypermetropia. Ophthalmoscopic appearances normal. In the right eye, he stated that there was no light-perception—that he was not conscious of the light-reflection from the ophthalmoscopic mirror; but the appearance of the eye was natural, the pupil responded to light, and the ophthalmoscope showed absolutely nothing abnormal but a low degree of hypermetropia. His appearance and manner were so utterly at variance with any suggestion of hysteria, or any kind of nervous derangement, that the suspicion of it did not at first occur to me. At the second visit, with both eyes fully under the effect of homatropine, ophthalmoscopic examination gave the same negative result as before. The mydriatic revealed a latent hypermetropia of 1.25 in the left eye, which had been the cause of the asthenopic symptoms. As a last resort, a prism with base down was held before the left eye, and, to my surprise, double images of a gas-jet were at once admitted. This, of course, proved that both eyes saw; how well the right could see was easily shown by a simple test which has never yet failed me in similar cases. A + 1.25 glass, which merely corrected the error of refraction, was placed before the right eye, and before the left a + 4 D., which excluded that eye from distant vision without the knowledge of the patient, and he was directed to read the test letters at twenty feet. He read No. 25 without hesitation—of course, with the blind eye. I then closed the left eye and called his attention to what he was doing. His surprise was equalled by his joy at the discovery, and both were evidently genuine. There was no suspicion in my mind of a conscious deception on his part; in fact, he had been ready to seal his good faith by the sacrifice of his eye.

Interesting points in this case are the long continuance of this imaginary disease and the entire absence of any other symptoms of irregular nervous action. After remaining firm in the belief of his blindness for ten years, there is no reason why he might not have carried this imaginary burden through the remainder of his life. The patient himself considered his general health to be perfect, and his uncle, a well known medical practitioner, assured me that he had not only always been free from any other suggestion of hysteria, but that he knew of no young man in whom he would be more surprised to find symptoms of nervous derangement.

The behavior of the pupil should have excited suspicion of simulation at once, as prompt pupillary reflex in a blind eye may be considered a physiological paradox. My excuse for not having entertained this suspicion at first is the apparent absurdity of that view of the case when the history and present condition of the patient were considered. That the converse does not always hold—that a perfectly immovable pupil is not positive proof of something more than hysteria—was shown by a typical case of hysteria that I reported to the Ophthalmological Society in 1884, in which a widely dilated and fixed pupil was one of the symptoms promptly relieved by the application of a wooden imitation of a magnet.

THE POST-MORTEM IMBIBITION OF POISONS IN ITS MEDICO-LEGAL BEARINGS.[1]

BY JOHN J. REESE, M.D.,

LATE PRESIDENT OF THE MEDICAL JURISPRUDENCE SOCIETY OF PHILADELPHIA, AND PROFESSOR OF MEDICAL JURISPRUDENCE AND TOXICOLOGY IN THE UNIVERSITY OF PENNSYLVANIA, ETC.

THE phrase—*post-mortem imbibition of poisons*—literally signifies the imbibition of poisons into an animal body after death. To the toxicologist, however, it has a more distinct, specific meaning—namely, the infiltration into the different organs and tissues of the body of a poison which has been introduced after death either into the stomach, the rectum, the abdominal or the thoracic cavities, and which has subsequently penetrated by transfusion into the adjacent viscera.

The whole scientific interest and importance of this subject centre in the fact so essential to the toxicologist—that in his search for a poison in a dead body, in a criminal case, the grand object of the analyst is not merely to discover this poison in the stomach (since there is always the *possibility*, at

[1] A paper read before the Medical Jurisprudence Society, of Philadelphia, by special request at the stated meeting Nov. 12, 1889.

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least, of its having been introduced here after death), but rather to detect its presence in the various organs and tissues of the body, as the liver, kidneys, spleen, heart, lungs, brain, spinal cord, and even the muscles and bones, into which it had been carried and deposited by the circulation during life, and where its remains may often be discovered a long time after death.

Now, the detection of this *absorbed* poison—as it is rightfully named—in any of the organs of a dead body has hitherto been universally regarded as the most positive and satisfactory proof that the poison had been taken during life, and that it was undoubtedly the real cause of the death, in the absence of all other obvious causes, revealed by the post-mortem examination. Certainly, it would seem, there could be no other legitimate conclusion. But it will be at once apparent that if it can be shown that by introducing a poisonous solution into the stomach, rectum, abdominal or thoracic cavities, or bloodvessels, *after* death, this solution will pass through the walls of these cavities, by the well-known physical law of osmosis, or transfusion, and will gradually but surely penetrate into the adjacent viscera—first into the nearest ones, and subsequently into those more remote, so as to be discovered in them by chemical analysis; then I submit that a most serious and vital difficulty might present itself, fraught with no little danger, namely, the risk of confounding or mistaking the one condition for the other, in a case of alleged criminal poisoning, where the issues of life and death are at stake, and where the evidence for conviction might be dependent chiefly or solely on the chemical analysis. For, as is evident, there is absolutely nothing in chemistry alone to distinguish between them; the same tests must be applied to both, and they must yield the same results.

Those persons who have given no special attention to this subject may be surprised to learn that such a question should ever be raised in a criminal trial for poisoning; but cases not a few have occurred, and their number is increasing, where the whole question of the guilt or innocence of the prisoner may hinge simply upon this very point—whether the poison that has been discovered in the organs of the deceased may not possibly have been first introduced into that body after death, for a wicked and fraudulent purpose—either to create a false impression that the deceased had actually been poisoned, although his death had been correctly attributed to other and natural causes, or else in a case of actual criminal poisoning, where the guilty criminal has sought to cover up his work, and escape detection, by injecting the same poison into the body of his dead victim (for example, a solution of arsenic, or of corrosive sublimate) under the specious guise of embalming or preserving the body; but, at the same time, armed with the guilty knowledge that the poisonous liquid thus introduced would speedily be diffused through the different organs of the body, and would thus render abortive the subsequent attempts of the toxicologist to prove that the death had been caused by poison. Cases of this latter character have more than once been brought to my notice.

The bare fact that a dead body may imbibe a poison was first clearly demonstrated by Orfila, more than sixty years ago, by experiments made first on the bodies of the lower animals, and then upon the human body. He found that when a mineral solution was injected into the stomach or rectum after death, it was speedily diffused throughout the various viscera; the completeness of the diffusion and the number of the organs affected being always in proportion to the strength of the poisonous solution, and the length of the interval between the injection and the examination of the body. This is precisely what we might have expected.

Orfila also distinctly exposed the fallacy of the prevalent popular idea that a dead human body might possibly absorb the poison if buried for a long time in an arsenical soil. Now, as this is a question of some medico-legal importance, I will dwell upon it for a moment. It is well known that the soil of certain cemeteries contains traces of arsenic—more frequently in Europe than in this country. Hence it occasionally happens in a trial for alledged arsenical poisoning, where the evidence against the accused is chiefly of a chemical character, that the counsel for the prisoner, driven to extremities, will take refuge in the now exploded idea that the arsenic found in the body of the deceased was really due to absorption from the soil of the cemetery, more especially if the body had been interred for many years, so as to have given time for the coffin to fall to pieces, and the remains to come into actual contact with the poisoned soil.

But, as I have just observed, Orfila distinctly proved the fallacy of this notion. He showed by experiments that imbibition from an arsenical soil can never happen, and for the very sufficient reason that the arsenic existing in the soil of cemeteries is never in a soluble state, and consequently could never be absorbed. This opinion of Orfila is now universally adopted by toxicologists; and I believe that no well-instructed criminal lawyer of the present day would hazard his reputation by urging such a plea before a court and jury.

The experiments of Orfila already alluded to, to prove the *fact* of the imbibition of poison after death, have since been frequently repeated by other investigators, among whom is myself. Some years ago I instituted a series of experiments at the University of Pennsylvania, or rather I supervised those

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made at my suggestion by Dr. George McCracken, of this city, a member of my class. My paper, containing the results of these experiments, was read before the College of Physicians of Philadelphia, and was published in its *Transactions*, 1877.

The animals whose bodies were employed were cats and dogs. The poisons used were solutions of arsenious acid, corrosive sublimate, and tartar emetic. These were injected through a tube, into the stomach, and the bodies were then buried in the earth for periods varying from three to seven weeks. On subsequent examination the clearest possible proofs of the diffusion of the poisons into adjacent viscera were afforded; they were detected in the lungs, diaphragm, spleen, kidney, heart, and urinary bladder, by chemical analysis; and also rendered visible to the eye by the deposit of characteristic colored spots of the respective sulphides in the peritoneum and mesentery—*yellow* in the case of arsenic, *orange* in that of antimony, and *black* in that of mercury. These experiments also confirmed another fact mentioned by Orfila, namely, that this post-mortem imbibition is progressive, depending upon the length of time elapsing between the injection of the poison and the examination of the body.

I regret to say that at this time no examination was made by me of the brain and spinal cord; because I did not, at that date, believe that a poison thus imbedded could possibly pass through so many intervening tissues, and at last penetrate the thick bony casements enclosing the brain and spinal marrow. Moreover, at that time no experiments had been made to ascertain this fact; and I then even ventured to express the opinion that such a result could hardly be expected; so that the discovery of a poison in the brain or spinal cord after death might be regarded as pretty sure proof of ante-mortem poisoning, whilst its detection in any of the other organs could not be received as such incontrovertible evidence, inasmuch as they might possibly have become contaminated by a post-mortem imbibition.

But certain experiments conducted subsequently to my own, especially those by Dr. George B. Miller, of this city, another member of my University class, and by Professor V. C. Vaughan, of the University of Michigan, and others, seem very positively to establish the fact that *arsenic* certainly (and other poisons presumably) does really reach both the brain and spinal cord after previous injection into the stomach of a dead animal. I have as yet no data to prove that this result would follow the injection of the poison into the rectum, or into the abdomen or thorax, but I have very little doubt that such would be the case.

Thus it has happened that this lately ascertained fact, although deeply interesting from a scientific point of view, proves to be unfortunate in another respect, inasmuch as it destroys completely what otherwise would have been a most valuable and trusty means of diagnosis.

We all know that it is much more difficult for the toxicologist to detect the poisonous alkaloids—strychnine, morphine, nicotine, etc.—in the organs after death, in a case of genuine ante-mortem poisoning, than it is to discover the mineral poisons, arsenic, mercury, antimony, lead, etc. Of course, the difficulty would be proportionately increased in the attempt to detect these alkaloids in the viscera when injected into the body post-mortem. So far as I am aware, no experiments in this line have been made, or, at least, have not yet been published, until those recently performed by my friend, Dr. Miller, whom I have already quoted. He has within the past few years made a series of investigations to test this fact, more particularly with the alkaloid strychnine, taking it as a type of the alkaloids. He has kindly exhibited to me the results of his experiments, which were performed upon the dead bodies of rabbits. A strong solution of strychnine in water (ten grains to one fluid-ounce) was carefully injected into the stomach by means of a tube passing through an incision made in the œsophagus, this mode of injecting being adopted in order to avoid any possibility of the poison regurgitating from the syringe through the posterior nares, and thence through the sphenoid and ethmoid cells directly into the brain. The animals were examined at various periods after interment, varying from twelve days to several weeks; and, as the result, Dr. Miller feels perfectly sure (and I can see no reason to doubt the accuracy of his results) that he has detected strychnine imbibed post-mortem in the *liver*, *spinal cord*, and the *urine* remaining in the bladder. In the brain, however, he has not, thus far, succeeded in finding it.

I think, then, that we may regard it as an established fact that *all* poisons—organic as well as mineral—at least all those susceptible of solution, do undergo the process of imbibition or transfusion into the various organs and tissues of a dead body; and, further, that in every criminal trial for poisoning this important fact should always be kept in view for the benefit of the accused, and that in every toxicological examination of a dead body the possibility of the post-mortem transfusion should never be forgotten.

We are now naturally led to consider the important question whether there is any means by which, in the case of death from alleged criminal poisoning, we can positively discriminate between the poison administered before death and that which may have been injected into the body designedly after death. This is, of course, a question of momentous importance. Several cases have come to my knowledge where the whole question of the guilt or innocence

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of the accused hinged on this very point. For instance, an old man has died from some ordinary disease, but with no symptoms leading to the suspicion of poisoning. Previous to his death he had made a will, bequeathing the bulk of his property to his housekeeper, whom he had lately married, and leaving his children comparatively penniless. Now, these disappointed heirs restrained by no moral principle, might determine to thwart this unnatural act of their father, and to effect their wicked purpose they hesitate not to hatch a most diabolical scheme, viz., to charge the woman with the horrid crime of poisoning her husband for the purpose of obtaining his money. Armed with the fatal knowledge of the post-mortem imbibition of poisons, they secretly gain access to the buried body of their parent, and with no great difficulty succeed in introducing a solution of arsenic into the stomach, and, after quietly waiting for a few weeks or months, they begin to whisper the suspicion that there was a mistake as to the cause of the old man's death, and that there was a strong suspicion that he had been poisoned. This allegation would be rendered the stronger if any of the symptoms at the time of his death had happened to resemble those of an irritant poison. Very soon the tongues of gossip and slander would spread the flame of suspicion throughout the community, until it reached the ears of justice, when, forthwith, the exhumation of the body and an judicial examination follow. As the result of the latter, the presence of the dreaded arsenic is discovered in the different viscera of the body. And what follows? Sad to relate, the arrest and possible conviction of a perfectly innocent woman, around whom has been insidiously woven a net of suspicious "circumstances," through the meshes of which it seems almost impossible for her to escape. This is no mere fancy sketch; its counterpart is believed to have occurred more than once.

But take another illustration, of an altogether different nature, and one much more likely to occur. A husband, prompted by some base motive, determines to get rid of his wife by poison. It is administered to her secretly, and in small doses, so as gradually but surely to accomplish the desired end. The physician who may be called in, as well as the attendants upon the sick woman, may be entirely deceived as to the real condition of things, and the poor victim is treated for some supposed disease, until death ensues. Immediately afterward the designing husband, with a full knowledge of the consequences, and under the specious pretence of embalming the body of his wife, injects into the abdomen a strong arsenical solution—such as is often used by undertakers. Or, perhaps, he may even employ a physician or an undertaker to perform the job. The body is then duly buried, and the guilty husband hopes that his villany has been covered up; for, even if subsequently suspicion should be excited, and the wife's body should be disinterred and examined for poison, its detection in the different organs and viscera by the toxicologist might, as we have seen, be readily ascribed to its post-mortem imbibition, resulting from the embalming liquid. Again the important question presents itself—how are we to discriminate in such awfully intricate cases, in which the innocent may be made to suffer and the guilty may escape free? I answer, not by chemistry merely, since the results of a chemical analysis must necessarily be the same in both cases.

There are some considerations, however, which may possibly tend to throw light upon this confessedly intricate subject. As now understood, in every case of death from actual poison a careful toxicological examination of the body will usually reveal the remains of the poison which has been absorbed and retained by the different viscera, more especially by the liver and kidneys. In any such case, it is noted that the interior of the organ contains quite as much of the poison as the exterior, because it has been deposited there by the capillary bloodvessels during life; whereas, in a case where the organ has been contaminated by a post-mortem imbibition of a poison, the exterior of the organ should indicate a larger amount than the interior, and for a reason obvious on a moment's consideration. This may be regarded as one factor of the diagnosis, although perhaps not a very strong one.

Another circumstance worthy of greater consideration, although I believe it has never yet been thoroughly worked out, is that there is, probably, a histological and pathological change wrought in the tissues and organs impregnated with certain poisons, and visible only under the microscope. This alteration would be likely to occur only as the result of absorption of the poison into the circulation during life, and not from mere physical transudation after death. It is now well known that in cases of slow poisoning by arsenic, lead, and other metals certain neurotic symptoms are developed, accompanied by well-marked pathological lesions in the great nerve centres. In an address by Dr. Formad, of Philadelphia, before the International Congress of Medical Jurisprudence, lately convened in New York, upon this very topic, the opinion was expressed that there is always a very decided histological and pathological alteration in the mucous membrane of the stomach (he does not mention any other organ) produced by true arsenical poisoning, and differing from that caused by corrosive sublimate. He further asserts that "poisons introduced into the dead body do not induce any histological changes in the tissues whatever." This I believe to be the true direction

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in which to seek for the solution of this vexed question—the histological and pathological changes wrought in the tissues and organs by an ante-mortem poison; indeed, it may be regarded as the crucial diagnostic test, so far as it goes. We have, as yet, no evidence whatever of its application to the organic poisons.

But here I would guard against an error held by some, that any mere pathological alteration discovered in a stomach after death is sufficient, of itself, to warrant the conclusion of death by poison, and this for the simple but sufficient reason that these same pathological changes are often produced by disease. I admit there may be a very few exceptions to this view, as, for instance, in poisoning by the strong mineral acids or alkalies; but with these exceptions, I should consider it extremely hazardous, in a capital case, to found an opinion as to death by poison *solely* on the post-mortem appearances of the stomach.

A third factor in the diagnosis is the examination of the urine *before* death in a suspected case. This examination ought never to be neglected by the attending physician. An analysis of the urine after death—especially long after death—is much less satisfactory, since it has been shown that a poison may penetrate from the stomach into the urinary bladder by a post-mortem imbibition, and so contaminate the urine.

After all, we must be compelled in such cases to fall back upon what are termed the "circumstances" of the case. One of the strongest of these circumstances is the symptoms manifested by the deceased before death. As is well known, most of the violent, irritant poisons, when taken in fatal doses, are accompanied by well-marked symptoms, which, to an experienced observer, are very suggestive. But it should be remembered, they are *merely suggestive:* they do not convey absolute *proof* by any means, because these very same symptoms are sometimes simulated by disease. Thus I have, more than once, found large quantities of arsenic in the bodies of persons who were supposed to have died from cholera morbus, and who had been treated by physicians for this disease, and the cause of their deaths so certified by the physicians, so closely do the symptoms in both conditions resemble each other. But if the poison has been administered in small doses at intervals, then the symptoms are altogether different, and they may very readily be mistaken for those of some insidious disease.

And, finally, under this head, I should not omit to allude to those "circumstances" which, when they do occur, constitute a most important link in the chain of evidence: such as the existence of a strong impelling motive to the deed, on the part of the accused, or of some interest he may have had in the death of his victim—as, for example, the obtaining of a life-insurance claim. Likewise, the proofs of the purchase and actual possession by the accused of the very poison discovered in the body of the deceased; and, possibly, also the discovery of some implements belonging to the accused, such as, it might even happen to be, the very syringe and tube employed by him to inject the poisonous liquid after death, with enough of the remains of this liquid still adherent to the implements to be recognized by the toxicologist.

All these and many other such "circumstances" constitute invaluable material which an astute and judicious counsel will not fail to work up into most important testimony, either for or against the prisoner.

From what I have said, I think all must be impressed with the importance of the subject of the *post-mortem imbibition of poisons*—especially to the toxicologist and the legal physician. My own mind has been especially directed to it in its relation to the unauthorized and indiscriminate use of poisonous mineral liquids, injected into the bodies of the dead, for the purpose of embalming or preserving these bodies, by several cases lately brought to my notice which occurred in neighboring States, and in which the ends of justice were completely foiled by this pernicious practice. In two of these cases the poisonous compound was injected soon after death into the abdominal cavity by an undertaker, apparently without any authority, or orders, but solely to follow out his own ideas, or to carry out his usual custom. Now, in both these cases, there was a strong suspicion of death by poisoning. I would ask, does not an undertaker by such unauthorized action, although perfectly innocent of any guilty connivance, render himself liable to a very strong suspicion of such guilty complicity? And might not even an innocent physician, performing this operation in kind compliance with the request of the real poisoner and, of course, without any suspicion of the true cause of death, thus subject himself to the terrible consequences of being accessory to the crime? The third case which was referred to me—strange to say, from the same State—was that of the wife of a clergyman, who had died under strong suspicions of poisoning by arsenic. The husband, very soon after the death, caused an arsenical solution to be injected into his wife's body, ostensibly with a view of preserving it, but doubtless with the intention of thwarting the ends of justice by thus rendering the proof of poisoning impossible. The case was rendered stronger by the fact that this clerical Bluebeard had previously lost several wives, two of whom under precisely similar circumstances. The case, I learn, is still held under advisement, as the husband was not as yet under arrest, in consequence of certain family reasons.

Now, with a full knowledge of the above cases,

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and impressed with the danger and risk incurred by the community by this indiscriminate and unauthorized injection of dead bodies by undertakers and others, I some weeks ago sent a communication to our Board of Health, drawing their attention to the danger of allowing such indiscriminate embalming of the dead without proper authority, remarking, however, that I was not aware of any such cases occurring in this city, but that I knew of them elsewhere. My communication was intended to be merely precautionary: to call attention to an evil that did exist elsewhere, and which it was desirable to prevent getting a foothold here. I suggested the passage of an ordinance forbidding any undertaker, physician, or other person whatever, injecting any poisonous or embalming fluid into a dead human body, without proper authority, except for the preservation of subjects for dissection in medical colleges. I was glad to learn from a somewhat vigorous protest from one of our undertakers that such an indiscriminate use of embalming fluids was *not* common in this city. Still, the passage of such an ordinance might certainly be productive of good, since I have the most positive evidence that the practice alluded to is very common in other parts of our country.

THE CLIMATIC TREATMENT OF GASTRO-INTESTINAL DISEASE IN CHILDREN.

BY BOARDMAN REED, M.D.,
OF ATLANTIC CITY, N. J.

CLIMATIC treatment can at present be carried out only by transporting the patient to some locality having a different climate. The time may come when a change of air (which is not all there is, however, in a change of climate) may be obtained by conveying to sick-rooms in the cities various qualities of air through pipes from the seashore, country, or mountains, as coal-oil is now sent to market. The physician of that future golden age may then prescribe for his patients a special kind of air as readily as water from a certain spring, and the nurse can have it turned on just as she now does gas, water from the spigot, or hot air from the register.

Why does a change of air often effect such striking remedial results? The question has never been satisfactorily answered.

When a sick child is removed from the hot, stifling, and germ-polluted air of a great city in summer to any comparatively cool and healthful place, there are reasons enough why marked improvement results. But when a weakly infant resident in the most salubrious mountain home contracts diarrhœa from improper feeding or imprudent exposure to extremes of heat or cold, and the disease runs a slow course, a change to the seashore will usually have a like beneficial effect. Then, when the same thing happens to a child resident at the shore, a change to the moutains may be equally helpful.

We can only infer that in such cases the breathing of a different air acts as a stimulant to the vital processes. The probability is that there are ingredients peculiar to the atmosphere of every locality that have a tonic effect at first, until, like too long a course of quinine or other roborant drug, they cease to stimulate. Then, upon taking the patient to another climate, other tonic ingredients are inspired, with at first an invigorating and restorative effect as before.

Some such varying substances there must be in the air of every region, whether they are gaseous elements unrecognized by the chemist, or only coarser material particles held in suspension, as certain amounts of saline constituents are known to be held in suspension in sea air.

When recently requested to write a paper on the climatic treatment of cholera infantum, I objected that the subject was too restricted. Another reason for desiring to enlarge its scope to "gastro-intestinal disease in children" was that at the seaside resorts where most of my clinical experience has been acquired, cholera infantum is a rare malady, and, that therefore, I am less familiar with that affection than with most others that afflict babyhood.

Its later stages and its results I see very often, since it is exceedingly common for infants to be sent to the seashore as soon as the violence of the attack is over, whether the after-condition is a subacute or chronic entero-colitis, or one of slow convalescence with great debility.

But no case of genuine cholera infantum has occurred in my practice at Atlantic City for at least four years. It may be only a coincidence that for about the same period of time the town has had an excellent water supply, and a system of effective underground sewerage in full operation. During the preceding years, when its sanitary condition was less perfect, cholera infantum, though very infrequent, was met with by me occasionally.

Evidently the best treatment for the graver forms of "summer-complaint" is the preventive one, and the best method of prevention is to take teething infants away from the large cities before the hot season begins. One of the recognized authorities on this subject[1] says: "People with means avoid the dangers of summer diarrhœa by taking their children to the country, seashore or mountains, where the air is uncontaminated, the heat less intense, and the milk pure."

When such preventive treatment has been neglected and one of the dreaded summer maladies has attacked a child, change to a more salubrious

[1] Starr: Diseases of the Digestive Organs in Children, page 181.

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locality is still usually possible. In the earlier stages of cholera infantum removal to a distance is not often practicable; but later on, after the equilibrium of the circulation has been somewhat restored, no remedy is more efficient for the resulting dangerous prostration—whether accompanied by diarrhœa or not—than a transfer to some cooler and purer atmosphere. The most beneficial change in such cases is either to the mountains or seashore. Either answers well in the majority of cases, and the relative proximity or convenience of access often, properly enough, decides the choice. No complicating conditions could contra-indicate the seashore, except advanced phthisis, but infants with organic heart disease or seriously enfeebled circulation should not be taken to very high altitudes.

The more stubborn subacute and chronic intestinal fluxes, which in infancy may generally be classed pathologically under the term *entero-colitis*, are the most important of the affections now under discussion. They cause every summer a frightful mortality. Fortunately change of climate may not only be resorted to in advance with a reasonable certainty of preventing them, but may be employed also as the most efficacious means of cure in attacks that have resisted treatment at home.

When children wasted and debilitated to the last degree with diarrhœa are removed to a favorable locality by the sea, such as Atlantic City, concerning which I can speak definitely from a long personal experience, the result is usually a prompt and surprising improvement, which in some cases seems well-nigh miraculous.

The pale, languid, and emaciated little sufferers brighten up with the first whiff of the salt air. Peevish restlessness and wakefulness soon give place to quiescence and sound refreshing sleep. The flagging pulse rallies and becomes stronger. The appetite improves; food is better retained and better digested. In consequence there is a tendency to an improvement in the character and diminution in the number of the evacuations. The hollow eyes assume a more natural expression, and the shrivelled limbs grow plumper.

All this may, and often does, result from the stimulating effect of the change of air alone. More frequently, however, such patients require skilful medical attention as well as the best of nursing for the first few days at least.

This is not the place to discuss methods of drug treatment, and, therefore, I shall not go into that matter further than to mention *en passant* that small doses of creasote, carbolic acid, or mercurials, minute doses of arsenic or podophyllin, and moderate doses of bismuth or naphthalin, nearly all having decided antiseptic powers as well as a special action upon the alimentary canal, are prominent among the remedies that have usually accomplished the best results in my hands. In the more recent cases one laxative dose of rhubarb or castor oil has generally proved efficacious as a preliminary measure; and in all cases with much weakness of the circulation, brandy, digitalis, or other cardiac tonic has, of course, been a necessary adjunct.

In the management of these infantile diarrhœas certain hygienic precautions are always important. The flannel belly-band should never be left off, especially at the seashore. The food and drink should be rendered as nearly aseptic as possible. Even with the excellent water now obtainable at Atlantic City, and the fewness of disease germs in the air as compared with that of the large cities, I advise the boiling of all water given to sick babies, whether as drink or mixed with their food.

Infants suffering with entero-colitis are, in nine cases out of ten, bottle-fed, and besides requiring that the bottles and nipples be kept chemically clean, never countenancing, of course, such abominations as rubber tubes attached to the nipples, it is necessary that all forms of artificial food should by some means be rendered aseptic.

Cow's milk, when given to teething infants in warm weather, should be boiled as soon as obtained and then preserved in corked bottles or tightly covered vessels; or better still, the now familiar sterilizing process may be resorted to. It should be borne in mind, however, that except when the milk can be obtained directly from the cow, it is never very fresh, and rarely entirely unaffected by the injurious changes which begin in it as soon as it comes in contact with the air. When from twenty-four to forty-eight hours old, as it usually is when obtained from the dealer, it is such a dubious food, that it may be doubted whether in hot weather any process of sterilization or even peptonization can render it entirely safe and wholesome for sick children. And according to the results of my investigations, it is quite exceptional that the ordinary commercial milk, either in the city or the country, is less than twenty-four hours old when delivered to the consumer. By special arrangement it is sometimes possible to procure it on the same day it leaves the cow, especially when access can be gained to the owner of the animal.

The practice of sending to market directly from the dairy-farm fresh milk carefully put up in sealed air-tight jars, is coming into vogue, and probably in the near future an abundant supply of this kind can be obtained. With such milk the problem of infant feeding will have been greatly simplified.

For some time past, in treating infants in July and August, unless fresh milk could be had from the owner of one or more healthy cows, I have usually made a trial of the least sweet brands of condensed milk variously combined as the case seemed to require. Such trials have rarely disappointed me.

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With care to use only a fresh article, and to add to the solution a certain proportion of lime-water, together with, in some cases, barley-water or rice-water, I have seen in midsummer much better results than with any other lacteal combination. At other times of the year, and at any time when the baby and milk-giving animal can be brought near together, I consider good fresh milk, properly diluted and sometimes strengthened with cream and milk-sugar, to be usually preferable to condensed milk or any of the patent infant foods.

An important point in this connection is, that acute gastro-intestinal affections in infants will often respond much more satisfactorily to any treatment, climatic or medicinal, or both combined, if at the outset the patient be deprived of every form of milk for one or two days. The discovery in milk of tyrotoxicon and its highly poisonous action afford a sufficient explanation of the observed clinical fact that in stubborn cases of infantile diarrhœa suitable antiseptics, with a preliminary dose of some laxative —to antidote and sweep out the toxic remains of decomposed milk—will frequently accomplish better results than astringents, and that withholding lacteal food of every sort for a few days is sometimes an indispensable condition of cure. Gum-water, barley-water, chicken-broth, egg-water, a mixture of Bovinine or Murdock's Food with water, and, for older children, sta'e bread or toast crumbled in the juice from steak or roast beef, are among the substitutes which have often agreed well with my little patients.

In the care of these cases at the seashore it is important to pay more attention to the clothing than is necessary in the cities. This needs to be warmer, particularly at night and when the child is kept at the beach, as it should be the larger part of the time. Improper feeding, and especially over-feeding, often produce relapses at the shore, as they do everywhere. When there is much vomiting, the bottle should be taken away for a time and nourishment administered at frequent intervals by the tablespoonful, or even teaspoonful. When the child is in a hotel or boarding-house, or at points on the beach where many persons pass, it should be protected from the annoyance of being stared at by strangers, an infliction which frets some infants exceedingly. A child worn out by a long siege of diarrhœa has no nerve-strength to be wasted, and all such disturbing causes add to the exhaustion.

Exceptionally, these little patients fail to improve even in the most favored localities, but my later experience is to the effect that when they are sent to Atlantic City before their heart force is so far gone as to be incapable of restoration, they may nearly always be saved.

A PLEA FOR MORE CONSERVATISM IN THE EMPLOYMENT OF TAIT'S OPERATION FOR PELVIC DISEASE.[1]

BY W. H. SHARP, M.D.,
PARKERSBURG, W. VA.

OWING to the advance of abdominal surgery, and stimulated by the example of Mr. Lawson Tait, there has sprung up in this country a class of surgeons making a specialty of abdominal surgery. Many of these gentlemen have visited England, tarried at their Mecca in Birmingham, witnessed the marvellous skill of that master, and been dazzled by the celerity with which he operates and the successes following his skill, without profiting, we fear, by the rare judgment he shows in making proper diagnoses of the conditions requiring the operation.

Returning to this country impressed with the importance of these procedures, and anxious to exploit themselves before the public as experts and successful abdominal surgeons, they immediately seek for subjects on whom to exercise their skill and to show their success in curing patients by the removal of diseased organs, as well as to parade a long list of successful laparotomies. Brilliant reports of their cases are prepared and spread before the general profession, and the family physician urged to send the victims of pelvic disease to them for relief.

Some of these younger disciples of Mr. Tait are already rivalling him in the number of successful laparotomies, and every case recovering from the operation itself is heralded as a cure of long-standing and intractable disease. But somehow the reports of the cases end with their dismissal from the specialist's care when the abdominal wound is healed. We learn nothing as to the history of these cases, six months, twelve months, or twenty-four months after; nothing as to the effects upon the system, from thus abruptly changing the whole sexual life of the woman. Occasionally some of the profession more conservative offer a note of warning and protest, but it does not avail much. We are told that Mr. Tait has revolutionized the whole theory and treatment of pelvic inflammations of long standing or of recurrent nature. These gentlemen publishing the reports of such cases—first read before one or more medical societies, then published in some one of the medical journals, then put forth as a reprint and scattered broadcast over the land among the general practitioners—thereby make their cases, methods, and results public property, which should be considered, without reference to the gentlemen offering them, solely from a scientific standpoint. In the *American Journal of Obstetrics*, July, 1889, is an article of this kind, written

[1] At the time this article was written several papers on the subject by other authors, which have since appeared, had not been published.

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by Dr. B. Curtis Miller, of Charleston, W. Va., entitled "A Year's Record of Seventy-five Successful Cases of Abdominal Section." In a footnote he refers to 144 cases of laparotomy—which, from the text, I judge comprised his cases in a period of from eighteen months to two years. Of the 75 cases reported, 42 were cases of salpingo-oöphorectomy, of which number 27 were for diseased or presumably diseased tubes and ovaries, and 15 for uterine fibroids. Studying this report one is struck with the extreme brevity of the reports of the cases; the meagre character of the information given as to the symptoms demanding the operation, and the absence of details upon the pathological conditions found; nothing told of the previous treatment; and still more glaring is the utter neglect to tell us anything as to the after-history of the patients. For proof of this assertion I quote the following:

"Case II. Both tubes occluded and adherent; ovaries cystic. Case V. Tubes occluded and distended by a dark fluid; no adhesions; ovaries cystic, with small amount of pus. Case XII. Ovaries removed; rapid recovery; no pain since operation."

The latter was a case of dysmenorrhœa in a patient weighing 200 pounds. General health good. No account of condition of ovaries given.

"Case XIII. Ovaries cystic; small quantity of pus observed in right one. Case XIX. Ovaries cystic and considerably enlarged. Tubes in a catarrhal condition."

This appeared to be a peculiar case in that the patient was twenty years old, had been married only nine months, and

"suffered with more or less dysmenorrhœa and leucorrhœa, with constant uneasiness over ovarian region."

Certainly, on the face of the report, it appears as if some less heroic treatment than spaying could have been offered to this patient just upon the threshold of married life with its aspirations of maternity. General practitioners everywhere have seen women so affected conceive, and fulfil the duties of the married state.

"Case XXIII. Mother of two children, a great sufferer from dysmenorrhœa. Both ovaries enlarged and very sensitive."

Could not medical treatment have offered some relief to such a sufferer, save so serious a surgical operation, no matter how skilfully done?

"Case XXVII. Both ovaries greatly enlarged, very soft and spongy."

It appears that the operation was done because of profuse menstruation. No history of prior treatment or of results. Of the fifteen cases done for uterine fibroids there is no history, no reason why the operation was necessary, nor a single word as to the resulting benefits to the patients—whether or not the enforced menopause caused arrest of development. Fibroids have not always become quiescent after the cessation of menstruation. Under "Ovariotomy," our reporter says:

"Nine cases for the purpose of extirpating diseased ovaries or for the relief of troubles arising therefrom."

What troubles we are left to guess. Of what scientific value is such a statement? Under the head of "Miscellaneous Sections" are given five cases for uterine fibroids, with not a word as to what was found or what was done, whether the fibroids were removed, or the tubes and ovaries taken away, or the uterus amputated. I forget Case XVI.:

"Patient had bilateral laceration of the cervix, suffered from various reflex nervous troubles, soreness over lower abdomen, dysmenorrhœa, and difficult locomotion."

On April 14th, he operated on the lacerated cervix; and, not waiting to see what effects were to follow Emmett's operation—effects which, we all know, require weeks, and sometimes months, to develop—or allowing the nervous system to recover slowly from the effects of reflex irritation, this physician, on May 8th, twenty-five days after operating on the cervix, removed the ovaries; one containing one ounce of serum, the other filled with blood and serum. Patient made a rapid recovery. It would appear to an uninitiated general practitioner from this report of the pathological condition that it was necessary for the operator to find something, however slight, to justify this case of spaying.

In fact, this whole report is simply the heralding of the success of the individual operator in performing abdominal section. In the same number of the *Journal of Obstetrics* before cited, is the report of the proceedings of the American Medical Association, where, in the papers read and in the discussions upon the treatment of pelvic abscesses, the same radical treatment is advocated: abdominal section urged in all cases of pelvic abscess, viz., in all collections of pus in the female pelvis; and the drainage of these by vaginal incision, or aspiration through the same canal, condemned in unsparing terms. One acquainted with the names of the gentlemen taking part in the discussion could readily recognize the fact that most of them had been pilgrims to the shrine of Birmingham. A gentleman whom I in former years had the pleasure of knowing, some years since went to Europe and passed some months with Mr. Tait, and has since been devoting himself to abdominal surgery, especially as applied to gynecology. Able, energetic and enthusiastic, he has earnestly, by voice and pen, advocated the views of Mr. Tait. In a paper read before the Cincinnati Medical Society, January 2, 1888, he advocated

"the performance of the operation at the end of from four to six months after the onset of the disease."

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Later, in May, 1888, in a paper read before the Section of Obstetrics, American Medical Association, he said:

"I believe that the best plan to pursue in these cases, after a period ranging from twelve to eighteen months of constant and proper care and treatment which is not followed by more than temporary relief, is to advise an operation for the removal of the diseased structures, as the safest and best treatment; safest because a very small per cent. die if properly cared for, and best because it is a permanent cure."[1]

Certainly the later is the riper and wiser conclusion. In most of these reports the operators end their histories of the cases with their dismissal, the recovery from the operation being complete; but we are left in the dark as far as the future of the patient is concerned. Are they restored to health and able to resume the duties of their lives? Being in a neighboring town lately, I inquired of several who were in a position to know concerning the health of one of these patients thus operated upon some two or three years since. If my information is correct she is still an invalid—certainly not restored to health, even if relieved of recurrent attacks of pelvic inflammation. In this series of 75 cases of Dr. Miller, 15 are for removal of ovaries and tubes for uterine fibroids. All the comment is:

"That oöphorectomy was performed upon these patients for the premature induction of the menopause, since it *seemed to promise* [italics mine] better results and greater relief than any other method of treatment, when the numerous complications and varieties of disorders noticeable in many of them had been carefully considered."

No information is given as to why the operation was necessary, what complications were noticeable, or what relief was obtained. I know of a number of cases of uterine fibroids under the care of my medical friends, as well as my own, who, with well-considered medical treatment, are getting along fairly well and attending to their household duties. For the benefit of those of the profession who think that nothing can be offered to such patients but removal of the uterine appendages, I commend a careful perusal of the paper of Dr. Bedford Brun, of Alexandria, Va., in *Gaillard's Medical Journal*, 1887 or 1888, on the "Treatment of Uterine Fibroids," or again, to the reports made by those who have used, or seen used, Apostoli's treatment.

In the discussion of Dr. Hall's paper at the American Medical Association, 1888, Professor Goodell, than whom none is more qualified to speak, took conservative ground, saying that he did not believe that because the ovaries or tubes contained serum, blood, or pus, they should for that reason be removed; he said:

"It is more judicious to give the patient first the benefit of preliminary treatment before resorting to an operation."

And further:

"One reason which should guard us against using the knife too hastily is, life is too dear to be jeopardized by a hasty operation. A certain percentage of women will die after all operations, and, if the truth be always told, a still greater per cent. will, perhaps, be found."

He feared that too many, especially of the younger practitioners, were urged to operate "by papers read." (Above from reprint of Dr. Hall's paper.) Others have also joined in these warnings. In a late number of the *Journal of the American Medical Association* is an able editorial article, entitled "Prurigo Secandi," based upon the warnings of Professor Lefort, in his late editions of *Malgaigne's Surgery*, from which I make the following extracts. The application there is not confined to abdominal surgery. Lefort says:

"When I see the multiplication of successive operations for diseases which a hospital experience of more than forty years has shown me to be either relatively rare, or curable by non-operative treatment, I am led to believe that many of these surgeons, instead of asking themselves what operations the disease and the hopelessness of the treatment compel them to perform on the patient, inquire rather, is the patient one whom they can induce to undergo the operation just then under consideration, not to say in fashion."

The editor, commenting upon the text of Professor Lefort's remarks, further says:

"The fact that an operation is capable of curing the disease is not of itself a justification for the operation. The gravity of the operation must be compared with the gravity of the disease. The benefit to the patient must be proportioned to the danger to which he is exposed."

Certainly this applies to such an operation as the removal of the uterine appendages for dysmenorrhœa, or even a constant pain over the ovaries, or for a persistent menorrhagia. As illustrations showing that well-directed local treatment will, in many instances, so improve the condition, I cite the following histories:

Mrs. X., the mother of three children; the youngest died in infancy, twelve years previously. She had for some years suffered with painful menstruation, which required her to keep her bed for one day during every menstrual period, which recurred every third week, and was not profuse. At such times she took some anodyne, but formed no habit. I treated her for endocervicitis, without relief to the painful menstruation. She led an active life, attending to her household duties. Later she developed an attack of pelvic inflammation on the right side. This I am certain was specific, her husband being under treatment for gonorrhœa. I aspirated and drew off some pus, more escaping along the track of the needle, *per vaginam*. Under careful nursing, complete rest, hot vaginal douches, and applications of tincture of iodine, and glycerin tampons, together with tonic constitutional treat-

[1] Reports of papers read by Dr. R. B. Hall before the societies mentioned.

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ment, she recovered. For several months at the menstrual period she suffered more, and during one or two had a discharge of pus *per vaginam*. She is now as well as before the attack, and leading the same active life.

The following case occurred in the practice of a friend:

Mrs. G., mother of one child, which was fifteen years old. After the birth of this child she had a bad getting-up. Patient had constant pain in the left ovarian region and was treated by several physicians of experience during the following years. Two years ago she came under the care of a physician who found the uterus enlarged, with evidence of former pelvic inflammation—endocervicitis—and a discharge from the uterus of muco-pus. Under local treatment similar to that described above she improved greatly. Being away on a visit to a sister in the city where she had formerly resided, she consulted a man of prominence, who diagnosed an ovarian tumor on the right side, the size of an orange, and advised operation for its removal. Being alarmed, on her return home I saw her in consultation. I found enlargement on the right side, not as large, however, as an orange. The uterus was still enlarged, but it was evident that she had greatly improved under the treatment; I advised its continuance. More than one year has passed; she is better, attends to her household duties, and suffers only with the old pain in the *left* ovarian region.

The following case occurred in the practice of Dr. H.:

Mrs. A., mother of one child; had some stenosis of cervical canal, possibly caused by former applications of nitrate of silver. She was also suffering from some reflex nervous troubles. This condition was treated by gradual dilatation. There developed a swelling as large as a hen's egg on one side of the uterus, with tenderness and pain. Hot applications and rest were followed by a discharge of pus *per vaginam*, judged to be from the uterus. This happened twice while under Dr. H.'s care. The patient said it had happened twice before; the last time while she was under the care of a distinguished gynecologist of one of the Western cities, who had advised removal of the ovary. Under Dr. H.'s care she recovered and for over a year has been perfectly well.

I could cite other cases who were made comfortable, though affected by pelvic troubles, with pain and tenderness as a prominent feature, without recourse to an operation. Patients not robust, it is true, and at times suffering from pain, but able to enjoy life and contribute to the happiness of those around them. Could an operation for the removal of the uterine appendages do more for these patients? I do not wish to deny that this operation is often necessary; but to protest against this tendency on the part of those calling themselves abdominal surgeons, to offer this operation to women who suffer from pelvic pain and pelvic inflammation as the only cure for their troubles. Twenty-five years ago, when I entered the profession, Marion Sims had offered incision or discission of the os uteri as a cure for dysmenorrhœa and sterility. Allured by his captivating writings and brilliant successes, throughout the country enthusiastic followers were cutting the cervix, with results disastrous, or at least disappointing, to their patients. Later, stimulated by the teachings of Emmet, without the restraining influence of his mature judgment, a host of imitators arose who deemed it necessary to excise every bit of cicatricial tissue *and more too*, which accompanied every *slight* tear of the cervix—giving almost just ground for the *bon mot* of the Englishmen—"that Americans slit the cervix to sew it up again." And now another generation appears who are out-Heroding Herod in their anxiety to perform laparotomy in all cases where the patient can be persuaded to part with her ovaries. As further support to what I have written, let the reader refer to a late paper read by Dr. J. M. Baldy before the Philadelphia Obstetrical Society, March 7, 1889, entitled "Complications following Abdominal Section." Dr. Baldy is an experienced operator and knows whereof he writes. He shows the dark side, details the various complications following recovery from laparotomy, which are little, if any, less burdensome to the patient than the original disease. He, in conclusion, says: "When any person about to undergo an abdominal operation must run the gauntlet of all these complications, as well as many more, it becomes a serious matter in deciding for or against an operation. We have here more than the immediate risks to life to consider. We must think —Has his or her present disease been removed, will they be any better off, or may they not be the worse for the interference? At any rate, such a state of affairs should be a warning to inexperienced men not to be misled by brilliant reports seen in the journals, and not to rush thoughtlessly into an operation expecting to produce the same results. They should know that as a rule only favorable cases are reported, and that men do not like to publish to the world their bad work or misfortunes. Abdominal surgery is by no means the easy and simple procedure some men would make us believe, and such an operation should never be undertaken except after careful consideration of all the risks that must be run, the chances of benefit to the patient, and in the presence of actual demonstrable disease. Until the dark sides of abdominal work are well known to the profession at large, the *furor operandi*, which has been so justly complained of, will continue, and many women will succumb to the results of inexperience." And we might justly add. to the results of

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inexperience, operating where there is a lack of judgment in the selection of proper cases, or where there is present an overweening desire to perform a brilliant operation—where success will give so much more *éclat* than the same or better results following the slower and safer medical treatment.

NOTE.—After writing the above, looking over some journals of the past year, I found the fullest confirmation of the foregoing argument in several papers to which I must briefly allude. First, to the reports of the discussion on "Nervous Symptoms Arising from Ovarian Disease, and their Treatment" in the Section on Neurology, New York Academy of Medicine, *Medical Record*, June 22, 1889, by prominent neurologists and gynecologists. The question of the removal of ovaries and tubes for neurosis was fully discussed, and the consensus of opinion was very conservative, if not condemnatory. In this discussion, Dr. Field stated that he knew of thirty or forty cases of insanity following the removal of ovaries in patients at the Blackwell Island Asylum. Also, mention may be made of the paper by Professor T. Gaillard Thomas, on "Insanity following Gynecological Operations (see THE MEDICAL NEWS, April 15, 1889), and a report of two cases of insanity following Tait's operation in THE MEDICAL NEWS, November 16, 1889. All these articles, and many similar which may be found in current medical literature, tend to show that Tait's or Battey's operations are not to be lightly or enthusiastically offered to patients as a sure relief to their troubles, for flying from the evils which they know may lead them to a far worse fate.

THE CLINICAL ASPECTS OF THE PRESENT INFLUENZA EPIDEMIC IN WOMEN AND CHILDREN.

BY EDWARD P. DAVIS, M.D.,
PROFESSOR OF OBSTETRICS AND DISEASES OF CHILDREN IN THE PHILADELPHIA POLYCLINIC; VISITING OBSTETRICIAN TO THE PHILADELPHIA HOSPITAL, ETC.

AND

W. S. VANNEMAN, M.D.,
RESIDENT PHYSICIAN IN THE PHILADELPHIA HOSPITAL.

THE prevaling influenza became epidemic in Philadelphia first among the nurses of the Philadelphia Hospital, where the writers had the opportunity of observing its characteristics. The nurses attacked were women, most of them younger than thirty years, in as good general health as the duties of nurses in a large general hospital permit. That it was not an epidemic of nervous deception caused by fear of the affection was demonstrated by the fact that the first cases were not recognized at once as being influenza, and that many of those affected were women especially stolid regarding illness; they were furthermore very desirous to keep on duty and rarely reported themselves as ill until obliged to do so.

Regarding the beginning of the epidemic, the first case was that of an English immigrant who came to the hospital three days after landing at Castle Garden. He had been exposed to cold and wet, and presented symptoms of a severe cold which was followed by pneumonia, from which he recovered in two weeks. Occupying a bed next to him was a patient who was able to serve as waiter in the nurses' dining-room. He had influenza shortly after the immigrant's arrival, and following his attack the nurses were seized by the disease before it became epidemic in the Hospital.

The affection itself had in many cases a prodromal stage of general malaise; others missed this preliminary prostration and were suddenly taken ill. Pain in the cranium, back and muscles usually forced the patient to succumb. This was accompanied by a chill and an elevation of temperature in many cases reaching 104° F., the pulse rarely exceeding 100, the respiration remaining but little accelerated. In uncomplicated cases gradual defervescence succeeded, occupying seventy-two hours on the average; the lowest temperature reached was 96°, usually 97° was the limit. The return to a nearly normal temperature was marked by bronchial catarrh, transient slight pulmonary œdema; nasal and intestinal catarrh in some, intestinal and facial neuralgia, and by a degree of nervous prostration greatly disproportionate with the gravity and duration of the other symptoms. A mild grade of tonsillitis and pharyngitis, and occasionally conjunctivitis, followed the attack. Persistent anorexia, muscular and nervous weakness, characterized the convalescence of most patients; in a few the appetite remained unimpaired through the illness. The average duration of uncomplicated cases was from four to seven days. The percentage of complicated cases in the series studied, numbering forty cases, was 12.5 per cent.; the percentage of relapses was 2.1 per cent.

A noticeable feature of the epidemic has been the absence of nasal catarrh in many cases, while bronchial catarrh has been especially well marked. The complications observed have been severe follicular tonsillitis, catarrhal, lobular pneumonia, and an accentuated first sound of the heart, with evidences of a beginning mitral obstructive lesion in one case. These complications have not assumed a severe type; one case of catarrhal pneumonia is persistent, and gives rise to a suspicion of tubercular infection. In a case which had a second attack, it is curious to note that catarrh, nasal and bronchial, was present in the first but not in the second attack; the latter was characterized by severe headache and muscular and neuralgic pain. In many cases menstruation was precipitated by the illness.

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In general, the epidemic among the nurses bore the characteristics of an infection of varying severity, the effect of the infective agent upon the nervous system resembling somewhat that produced by diphtheria. Defervescence in these cases was followed by prostration disproportionate to the degree of fever; the special senses occasionally suffered, the abolition of taste being especially frequent. Severe conjunctivitis occasionally followed an apparent convalescence. Loss of weight generally occurred, to the extent of one-twentieth or one-twenty-fifth of the body weight. The secretions and excretions were those of any similar fever; commencing defervescence was frequently ushered in by profuse perspiration. Regarding treatment, antipyrin, antifebrin, and phenacetin were used to relieve the pain and fever of the first stage, the best results being obtained by antipyrin in five-grain doses. So soon as the fever declined, quinine, iron, and strychnine were persistently given, with easily digested food (milk and soups) and occasionally red wine. The mouth was rinsed and the throat gargled with equal parts of a saturated solution of potassium chlorate and boric acid, with glycerin. Symptomatic treatment was added to this routine as needed. In the bronchitis which so frequently followed the febrile stage the best results were obtained by ammonium chloride given in plain soda water, without syrups. Among the nurses the tediousness of convalescence was very marked, persistent tonic medication being required for ten days or two weeks after hospital work was resumed.

In addition to this epidemic among hospital nurses, other cases in women present points of interest. In a woman aged sixty-eight, vesical irritability with great prostration were the first symptoms observed. Continued fever (101° and 102° F.) followed for four days; convalescence has been very slow, with no nasal and but little bronchial catarrh, diagnosis in this case being based upon symptoms of a constitutional infection. Influenza does not seriously complica' normal abor or the puerperal state. In a recent uncomplicated labor no elevation of temperature or complication, except bronchial catarrh, followed delivery, although the mother suffered from influenza. Her child, on the fourth day, manifests no symptom.

That influenza may give rise to serious pneumonia in the puerperal state is exemplified by the case of a primipara. Suffering before labor from nephritis, asthma, and hydramnios, with contracted pelvis, delivery was difficult, the position being occipito-posterior and necessitating the forceps. Chloroform was used preferably to ether and delivery was safely accomplished. Severe bronchitis, with constant tendency to catarrhal pneumonia, supervened, from which the patient is making a difficult recovery. An example of the gravity of influenza when added to an impaired condition of the heart is shown by a young woman, apparently in good health, who visited my office recently for advice concerning a beginning bronchitis of influenza. While narrating her symptons angina pectoris suddenly developed, and for several hours her condition was one of great suffering and considerable danger. A peculiar harsh, brassy cough followed the pain and dyspnœa, and as respiration and cardiac action became better she was taken to her home in a carriage. She, too, presented unmistakable symptoms of a severe infection. In young children influenza may run its typical course, speedy convalescence following. Such has been the history of the majority of cases in carefully nursed infants in the Philadelphia Hospital, simple remedies sufficing to relieve symptoms. Occasionally a severe broncho-pneumonia results, as in a recent fatal case in which persistent high temperature (104°, 105°, and 106° F.) resisted all efforts at reduction. The child nursed eagerly, remained conscious, but was constantly pallid and asphyxiated. The persistence of the fever in this case was very noticeable. In older children pneumonia often follows influenza and proves unusually prolonged and intractable. A recent case of pulmonary tuberculosis in a boy aged eight years was complicated by influenza.

Severe bronchitis and broncho-pneumonia in those portions of the lungs not apparently infected by tubercle followed influenza, and severe illness resulted, from which recovery was slow. In cases in children who are not enjoying the benefits of the constant care of trained hospital nurses, the following formulæ have been found of value, and may be entrusted to even ignorant mothers:

For simple bronchitis of larger bronchi, with headache, fever, and restlessness:

℞.—Acid. hydrobromic. dil. . . ♏ 10.
Syrup. scillæ . . . . ♏ 10.
Aquæ . . . . ad ℥ 1.—M.

Every two hours, if required.

For capillary bronchitis with threatened suffocation, Henoch's powder is useful:

℞.—Camphor pulv. . . . gr. ¼ to 1.
Acid. benzoic. . . . gr. ¼ to 1.
Sacch. alb. . . . gr. 7½ to 10.—M.

In ten powders. One powder every two hours.

To this should be added the free use of whiskey and ammonia, a cotton or oiled silk jacket worn over the chest, and inunctions with camphorated oil; in severe cases croton oil diluted with olive oil may be applied over the sternum once or twice.

In conclusion, it may be remarked that, while evidence of distinct contagion is lacking, the coincidence shown in the arrival of the immigrant and the development of the epidemic at the Philadelphia

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Hospital is interesting. As has been observed by others, evidences of infection, varying in degree and in organs whose functions were deranged, but affecting chiefly the nervous system, were constantly and unmistakably present.

MEDICAL PROGRESS.

Treatment of Buboes by Iodoform Vaseline.—The following is Professor Pontain's "rapid method" of curing buboes: 1. Washing and disinfection of the region by means of hot sublimate solution (1 : 2000). 2. Puncture with the lancet if the skin is soft; with the straight bistoury if the pus is deeply situated. The puncture is small and made in the most fluctuating point. 3. Evacuation of the pus, gently pressing out completely the contents of the ganglion. A few injections of sublimate solution are now made to wash out the cavity. 4. Injection of iodoformized vaseline melted by heat. The oil is to be gently injected in by means of a glass syringe previously charged and placed in hot water. 5. Dressing with absorbent cotton. As soon as the cavity is full of the iodoformized vaseline, a wad of cotton, soaked in sublimate solution 1 : 1000, is placed over the bubo, and kept in place with a spica. The contact of the cold congeals the vaseline, and makes a plug at the orifice of the abscess. After the first day all pain disappears, and, usually, healing is complete in six or seven days. In some cases it is necessary to renew the injections of vaseline. Out of forty-one buboes thus treated by the author, more than half were cured in less than five days. The most rebellious required twenty-three days.—*Journal of Cutaneous and Genito-urinary Diseases*, December, 1889.

Creolin in Gynecology.—Extensive experiments have been made by CHÉRON with creolin in two and five per cent. solutions. The weaker solution was used for vesical injections in cases of gonorrhœa. Neither poisoning nor pain resulted; the discharge from the urethra diminished and soon disappeared, injections being made every other day. Gonorrhœal vaginitis was quickly improved by irrigation of the vagina and vulva with the five per cent. solution. In purulent cervical endometritis the diseased tissues were first carefully cleansed with absorbent cotton, after which an application of the five per cent. solution was made. After a few applications the suppuration ceased. Creolin gauze was found to be an excellent substitute for iodoform gauze in cases of suppurative and hemorrhagic endometritis in which a tampon was required. From the foregoing it was concluded that creolin has a very positive effect upon the microbes of gonorrhœa and of pus, and that in ordinary doses it is neither painful nor toxic.—*Annals of Gynecology*, December, 1889.

Effects of Chloralamid and Somnal.—One of the most careful clinical studies of the two new hypnotics, chloralamid and somnal, yet reported has been made by Dr. ADOLPH ROBINSON, of Berlin (*Deutsche medicinische Wochenschrift*, December 5, 1889), who, after numerous observations upon fifty patients suffering from many diseases, concludes that:

1. Chloralamid frequently causes a weak pulse; somnal, even in the same patients, has no noticeable effect upon the circulation.

2. The hypnotic effects of the drugs are about equal, neither producing a sound sleep.

3. Vomiting within an hour after the ingestion of either drug is not uncommon and is sometimes violent. In the cases where vomiting is not produced, loss of appetite, nausea, gastric pain, giddiness and headache on the following day are frequent. These effects are more frequent after the ingestion of somnal than after chloralamid.

Quinine in the Treatment of Syphilis.—A writer in the *Vratch*, November 21, 1889, recommends quinine in the treatment of syphilitic patients in whom cachexia and fever are marked symptoms. The quinine should be administered in doses of from fifteen to twenty grains daily, associated with mercurial inunctions. The drug prevents ptyalism and stomatitis, and, if ulcers are present, hastens their cicatrization. Quinine is useless in ordinary cases of syphilis.—*Bulletin général de Thérapeutique*, October 13, 1889.

Weil's Disease.—DR. WEISS, of Prague, who has made a careful study of Weil's disease, classifies and describes the symptoms thus:

1. The febrile symptoms are marked at the beginning of the disease, the fever being characterized by morning remissions. Between the fifth and seventh day the temperature begins to fall, reaching normal about the tenth or twelfth day. In some cases, after a period of normal temperature, there is a second accession of fever, seldom, however, a true relapse.

2. Pain in the limbs is a distressing symptom, rendering pressure or motion unbearable to the patient.

3. Gastro-intestinal symptoms are seldom distinct.

4. Jaundice is the most characteristic symptom, and is in all cases icterus from obstruction. Associated with the jaundice is swelling of the liver, the size of which depends upon the amount of biliary retention.

5. The swelling of the spleen, which is acknowledged by all authors, appears early and is a strong point in favor of the infectious nature of the disease.

6. Nephritic symptoms, such as hemorrhagic nephritis, are common and often very serious.

Bronchitis, epistaxis, herpes, purpura, petechia, and erythema, as accidental complications, have all been observed. The statistics of the epidemics in Prague show that men between the ages of twenty and thirty-five years are most frequently affected, and women and children less frequently.

The greater number of cases are seen in the summer months, but sporadic cases develop at any season. Epidemics of the disease are unquestionably caused by bad sanitation. It is infectious, but its contagiousness is as yet undecided.—*Wiener medizinische Presse*, November 17, 1889.

Naphthol-camphor as a Surgical Dressing.—DR. SCHWARTZ has been using for a year, and with very satisfactory results, naphthol-camphor as a surgical

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dressing. The naphthol-camphor is prepared by mixing one part of beta-naphthol with two of camphor, the combination making a brownish transparent fluid which readily saturates dressings. Schwartz has used this fluid as an application in cases of tubercular ulceration, cold abscesses, and suppurative otitis media. Ulcers, he states, should be dressed with gauze soaked in the solution, covered with protective and the whole with cotton wadding. This should be changed every day or two. Immediately after the application the patient feels a slight burning, which, however, soon disappears. According to Schwartz, the naphthol-camphor causes a luxuriant growth of healthy granulations, and cicatrization progresses at least as well as with iodoform dressings. Large quantities may be applied without danger of toxic symptoms. Occasionally a slight erythema appears upon the surrounding skin, which can be avoided by the use of borated vaseline. For suppurative otitis the ear should be syringed with a warm boric acid solution, after which the naphthol-camphor is dropped into the ear and the meatus closed with a cotton pledget. Discharge, offensive odor, and pain quickly disappear.—*Wiener medizinische Presse*, December 1, 1889.

Intra-laryngeal Injections of Menthol in Phthisis.—MR. WALKER DOWNIE, in the *Glasgow Medical Journal*, December, 1889, reports excellent results in the treatment of tubercular laryngitis and early phthisis with the intra-laryngeal injections of solutions of menthol in olive oil. To the solution he usually adds pure creasote in the following proportions:

Creasote	2 parts.
Menthol	12 "
Olive oil	86 "

An ordinary hypodermic syringe with a detachable vulcanite laryngeal tube is the most satisfactory apparatus. In administering the injection a laryngeal mirror should be used, by means of which the curved nozzle can be guided into the larynx without coming in contact with the tongue or fauces, thus obviating all risk of retching. The point of the syringe should be just below the vocal cords when the fluid is injected. If the fluid is applied to the cords, it produces a choking sensation, often with spasmodic cough. From twenty to thirty minims should be injected at intervals of a few minutes until a drachm and a half has been used. The patient's immediate sensations are a comfortable warmth throughout the chest, loss of inclination to cough, and disappearance of "tightness" of the chest, if it existed. Cough is often absolutely checked for from four to eight hours. Expectoration is reduced in amount and purulency. The majority of patients gain in weight, and high temperature is often permanently reduced during treatment.

The probable explanation of these effects is that the menthol acts as a local anæsthetic to the mucous membrane of the larynx and bronchi; that it is a powerful, though harmless, stimulant; and that it is an antiseptic which, being very volatile, is rapidly diffused throughout the lung.

Resorcin in the Treatment of Whooping-cough.—DR. CONCETTI, in the *Wiener medizinische Blätter*, asserts his belief that resorcin administered internally is preferable to any other remedy in the treatment of whooping-cough. He has employed the drug in forty-eight cases—among them an infant of twenty days of age. The daily dose varied according to the age, ordinarily 7½ to 22 grains, dissolved in a considerable quantity of water, being given. The doses were given from one to two hours apart, according to the intensity of the case. In thirty-four cases the affection occurred in its typical form, with repeated spasms of coughing, accompanied by the characteristic whoop. In twelve of these treatment was commenced in the catarrhal stage before the characteristic sound appeared. The whoop subsequently appeared, but only for a few days (from six to fifteen); it was by no means severe, and the attacks occurred but seldom. In the other twenty-two cases treatment commenced in the second stage, which, in some cases, had already lasted a week or more. In these latter cases the action of resorcin was most evident, since the attacks rapidly diminished both in intensity and frequency, while other methods of treatment which had hitherto been employed in the same cases remained absolutely without effect. The author likewise states that the duration of the disease was positively shortened, some cases lasting but one week, others two, or more seldom, three weeks; in the latter cases leaving a light catarrh, which readily yielded to ordinary remedies. Dr. Concetti suggests that perhaps the results obtained by Moncorvo and others from the local application of resorcin in whooping-cough are to be attributed to the amount of the drug which had been swallowed.—*Therapeutic Gazette*, December, 1889.

Treatment of Infantile Diarrhœa.—In a paper on the fermentative diarrhœas in infants, read before the Harveian Society, DR. LUFF, while admitting that though probably several irritating substances resulting from the fermentation of milk are factors in the production of the form of acute infantile diarrhœa under consideration, contended that the principal cause was the milk or cheese ptomaine, tyrotoxicon, produced during the fermentation of milk under certain conditions. The treatment of acute infantile diarrhœa with the view of arresting the abdominal intestinal fermentation was then considered. Carbolic acid, creasote, resorcin, salicylic acid, salicylate of soda, naphthol, and salol have been given in the hope of checking the putrefactive changes in the bowels. Ringer has recommended the administration of a weak solution of bichloride of mercury in infantile diarrhœa attended with very slimy stools. Dr. Luff then referred to Illingworth's antiseptic treatment of infantile diarrhœa, which he had himself found most useful, and the employment of which had first directed his attention to the treatment he now employed. This treatment consists in the administration of $\frac{1}{50}$ of a grain doses of the biniodide of mercury dissolved in iodide of potassium, combined with one-grain doses of chloral hydrate. It was shown experimentally that the soluble biniodide of mercury is an extremely soluble and diffusible salt, and that it possesses the property of combining with and rendering insoluble the milk ptomaine, tyrotoxicon. He has never found that the soluble biniodide of mercury itself acts as an intestinal irritant. Of eighty cases of acute infantile diarrhœa treated by this method, the diarrhœa ceased within two days in seventy-two of the cases; in five of the remaining eight cases it ceased within four days, and in no case did it last over seven days.—*Lancet*, December 21, 1889.

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Influence of Massage on the Secretion of Urine.—POLOUBINSKI has recently studied the influence of massage on diuresis, and his results, which indicate that massage of the abdominal region increases the urinary secretion, are published in the *Bulletin Général de Thérapeutique*, October 15, 1889. Experiments were made upon ten individuals whose renal organs were perfectly normal. During the entire duration of these experiments the diet of these persons was precisely the same in all cases. The abdomen was subjected to massage daily, the duration of each *séance* being about half an hour. The author believes massage not only increases the quantity of urine, but also the solids, urea, and especially the nitrogen eliminated in the urine. Massage of the lumbar region had no influence whatever upon the urinary secretion.—*Therapeutic Gazette*, December, 1889.

Insufflation of Salt in the Treatment of Neuralgia.—At a recent meeting of the Edinburgh Medico-Chirurgical Society, DR. GEORGE LESLIE gave the details of thirty or forty cases of facial and other neuralgias, cephalalgia, odontalgia, etc., which had been cured, in most instances instantaneously, by insufflation of powdered common salt through the anterior nares. The salt was either "snuffed" or blown up the nostrils. He had been unsuccessful in only two cases; both of these were cases of old standing, which had been treated frequently by morphine injections. In one of them excision of the nerve had been practised.—*British Medical Journal*, December 14, 1889.

Treatment of Baldness.—The following is LASSAR'S treatment for baldness:

First. A strong tar soap is applied to the scalp for at least ten minutes.

Second. Removal of the soap by a tepid water douche, the water to be gradually cooled, and the scalp well dried.

Third. The scalp is shampooed with the following mixture:

℞.—Bichloride of mercury	. .	10 grains.
Glycerin } Alcohol }	. .	of each 2 ounces.
Water	. . . . .	5 ounces.

Fourth. Shampoo with absolute alcohol, to which one-half per cent. of naphthol has been added.

Fifth. The following solution is well rubbed into the skin:

℞.—Salicylic acid	. . . .	30 grains.
Tincture of benzoin	. .	1 drachm.
Neat's-foot oil	. . .	3 ounces.

—*Provincial Medical Journal*, December 2, 1889.

Salol in Gonorrhœa.—DR. DREYFOUS, of Paris, advocates the treatment of gonorrhœa with large doses of salol. Dr. Dreyfous has tested the effect of salol administered alone, and in other instances he has given it simultaneously with copaiba and cubebs in order to hasten the cure. He recommends the use of salol to surgeons who operate on the urinary organs; it renders urine aseptic, which is thus innocuous when in contact with raw surfaces.—*British Medical Journal*, December 7, 1889.

Auscultatory Percussion.—KARL CZOBOS (Gyógyászat No. 42) describes a method of auscultatory percussion which he considers of especial value in the diagnosis of disease of the pulmonary apices. It is practised by placing the ear posteriorly between the scapulæ and percussing with two fingers on the anterior surface of the chest, beginning at the clavicle and percussing each side alternately. No pleximeter is used. The sound heard in this manner is entirely different from that heard in the usual manner of percussing, the pitch changing as the alveoli are filled and emptied during respiration. Over a healthy lung the tone is peculiarly resonant, of a metallic quality, and more intense in inspiration than in expiration. If infiltration is present, the sound has a singular dull quality as of solid metal striking a hard body. An unusual amount of fat over the clavicle does not change the tone, and in patients without much fat the method can be used over the entire chest.—*Prager medicinische Wochenschrift*, November 27, 1889.

The Effects of Phenacetin.—DR. K. C. BOSE, in a paper read before the Calcutta Medical Society, summarizes the advantage of phenacetin over other antipyretics thus:

1. It causes a gradual reduction of temperature, and the rise after the effect passes off is also gradual.
2. In ordinary doses, it never causes alarming symptoms.
3. It is tasteless, and for that reason easily given to children.
4. A full dose to a delirious person usually produces a quiet night.
5. It does not cause much sweating.
6. No effect is produced by the drug upon the heart.
7. No gastric disturbances are caused by it.—*Indian Medical Gazette*, September, 1889.

Administration of Chloral in Infantile Convulsions.—WIDERHOFER, of Vienna, recommends the following, as a sedative in infantile convulsions:

Hydrate of chloral	. . . 1 drachm.
Distilled water	. . . 3 fluidounces.
Syrup of bitter orange peel	. 1 fluidounce.

A teaspoonful every two hours.—*Revue Générale de Clinique et de Thérapeutique.*

Sleeping Draught.—YVON uses, for adults, a sleeping draught made as follows:

Hydrate of chloral	. . . 1 drachm.
Bromide of sodium	. . 1 "
Syrup of codeine	. . . 5 drachms.
Syrup lauro cerasi	. . . 5 "
Water	. . . . . 4 ounces.

—*Revue Générale de Clinique et de Thérapeutique.*

Prescription for Asthma.—

Hydrate of chloral	. . . 30 grains.
Iodide of sodium	. . . 22 "
Simple syrup	. . . . 4 ounces.

In an attack give a tablespoonful every hour.—*Revue Générale de Clinique et de Thérapeutique.*

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Injection for Infantile Convulsions.—

Musk	3 grains.
Hydrate of chloral	10 "
Camphor	15 "
Water	5 ounces.

—*Rev. Gên. de Clinique et de Thérapeutique.*

Suppositories of Chloral.—YVON, recognizing the irritation apt to be set up by chloral when given by the rectum, recommends the following:

Hydrate of chloral	7 grains.
Extract of belladonna	3 "
Cacao butter	45 "

—*Revue de Clinique et de Thérapeutique.*

Sweating of the Feet.—LEGOUX, writing to the *Revue de Clinique et de Thérapeutique*, recommends the following for sweating of the feet:

Liquid perchloride of iron	1 ounce.
Glycerin	3 drachms.
Essence of bergamot	6 "

This is painted over the feet and between the toes. The feeling of heat and soreness is removed at once, and comfort is soon obtained for long marches.

Two Cases of Intestinal Obstruction Cured by Injections of Sulphuric Ether.—CLAUSI, in *Il Morgagni* for September, 1889, reports the cure of two cases of obstinate obstruction by the injection of 3 drachms of ether and alcohol in 10 ounces of water by means of an ordinary syringe. The patients felt a sensation of warmth in the entire belly, and immediately belched up air loaded with the odor of ether. A movement of the bowels soon afterward followed.

Creasote in Phthisis.—GILBERT recommends, in the *Revue de Thérapeutique Médico-Chirurgicale*, the following prescription for phthisis:

Creasote	½ drachm.
Rum	1 "
Syrup of tolu	½ "
Water	6 drachms.

A tablespoonful in a wineglass of water.

Or,

Creasote	½ drachm.
Arsenite of soda	½ grain.
Huxham's tincture	8 ounces.
Malaga wine	8 "

A wineglassful with the meals.

Treatment of Diphtheria and Croup.—According to the *Journal de Médecine de Paris*, GALLOIS recommends the following solution for application to the areas of mucous membrane involved:

Crystals of thymic acid	15 grains.
Essence of thyme	1 drop.
Alcohol	1 ounce.
Dissolve, and add of water	2 pints.

For application to the nasal cavities, this must be modified as follows:

Acid. thymic.	7 grains.
Alcohol	½ ounce.
Sea salt	1½ drachm.
Water	1 quart.

This should be applied about every three hours.

Lotion for Pruritus Vulvæ.—

Carbolic acid	15 grains.
Tincture of opium	4 drachms.
Dilute hydrocyanic acid	2 "
Glycerin	4 "
Distilled water	4 ounces.

Mix and apply as a lotion, or the following may be used:

Hydrochlorate of cocaine	7 grains.
Lanolin	1 ounce.

Make into an ointment, and apply a small quantity of the ointment to the area involved.—*Gazette de Gynécologie.*

Powder for Coryza.—The following prescription for coryza is quoted in the *Journal de Médecine de Paris:*

Naphthalin, finely pulverized Boric acid	āā 25 parts.
Pulverized camphor	1 part.

To which may be added one or two minims of essence of rose. A pinch is to be occasionally snuffed into the nostrils.

Operation for Prolapse of the Rectum.—M. VERNEUIL, at the Société de Chirurgie, described a new method of treating rectal prolapsus, by attaching the adhesions of the posterior surface of the rectum to the corresponding portion of the pelvis. After reducing the intestine, the portion of the anal orifice to be excised is determined. A triangular fragment is then traced by means of two transverse incisions passing through the posterior portion of the anal orifice, and two others passing from the extremities of the two first to the point of the coccyx. When the rectum is exposed, four horsehair sutures are introduced into its wall and placed at intervals of about half an inch from each other. The intestine is raised by drawing all the threads toward the concave portion of the sacrum. In order to fix the intestine permanently, the threads are drawn through the skin to the right and left of the wound, one and three-quarters inches distant from the median line, with Emmet's needle. Thus four handles in the form of a U are contrived, which may be tightened at will. The fragment traced as above described is then detached at the base. The ano-coccygeal wound is closed by transverse sutures. A large drain is placed at the back of the rectum, in order to form a track which will sustain and increase the adhesions. The anal orifice is contracted by horsehair suture. M. Verneuil obtained good results in a case which had lasted four months with this method, which he names "posterior rectopexia." At the same meeting M. Delens recommended the following method in cases of voluminous prolapsus. He applies fuming nitric acid to the tumor, reduces and plugs the anus, and administers opium in order to prevent the occurrence of stools during at least eight days. M. Schwartz has obtained good results by making scores with the thermo-cautery on the projecting intestine, and pushing backward the anus toward the coccyx, the old orifice being closed by perineorrhaphy. M. Segond considers that ablation should be practised in order to perform colopexia with success. —*British Medical Journal*, December 21, 1889.

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SATURDAY, JANUARY 11, 1890.

"MENTAL HEMIANOPIA."

IT is with much regret that we note the practical failure of the work of the commission appointed by the New York Neurological Society in March, 1887, to investigate the claims of Dr. George T. Stevens that "difficulties attending the functions of accommodating and adjusting the eyes in the act of vision, or irritations arising from the nerves involved in these processes, are among the most prolific causes of nervous disturbances, and, more frequently than other conditions, constitute a neuropathic tendency." The November number of *The Journal of Nervous and Mental Diseases* is devoted to its report, with some preliminary notes, and we give elsewhere a summary of the report of Dr. Stevens's protests, and the discussion at the meeting of the Neurological Society, on Nov. 5, 1889, when these were presented. The inquiry grew out of a paper read by Dr. Stevens on "Irritation arising from the visual apparatus considered as elements in the genesis of neuroses," in which extreme claims were made as to the importance of ocular strains and the great benefit of their correction for the relief of insanity, epilepsy, chorea, and other nervous disorders; and a commission consisting of Drs. Seguin, Birdsall, Starr, W. O. Moore, D. Webster, C. L. Dana, and F. P. Forster, was appointed to investigate the matter, by submitting cases of such disorders to Dr. Stevens for treatment, and studying the results.

It was to be anticipated that difficulties would arise in the investigation, and that the result reached would not obtain unanimous acceptance either for its facts or its deductions; the personal equation forms so large a factor in judgments as to functional nervous troubles that the most competent and honest observers might well differ as to the first and last states of the patients studied; and the statements of such patients about themselves, which would form not a little of the evidence, must of necessity possess but limited value. Still, it was not unreasonable to expect a report made in judicial spirit, and set forth with sufficient accuracy to secure respectful attention.

Such a hope is hardly realized; and the phrase of our heading, which Dr. Stevens uses to characterize the views of the commission, must appear to have some justification even to those not at all inclined to take his part in other respects. The unfavorable report gives evidences of serious inaccuracies, and the inclusion of the series of cases admittedly "not counted," savors strongly of bias and injustice. During the two and a half years the commission furnished but twenty-eight cases—five choreic and the rest epileptic—and only one-half of these were available for the study; and this poverty of material, coupled with the withdrawal of at least one suitable case, goes to show, as he claims, that ordinary, typical cases were withheld in order to increase the difficulty of his task. In the Neurological Society, the small assemblage which met to hear the report, and accepted it by a vote of five to four, is another of the unfortunate aspects of the affair, which detracts greatly from the weight of the judgment which has been passed against Dr. Stevens's claims. That these claims were apparently extravagant, and advocated by Dr. Stevens and his followers with more zeal than discretion, should have had little influence with this commission, which offered to put them to a judicial test; and the room for cavil which the report affords will rob it of much of its weight with the unprejudiced, while it awakens some sympathy with Dr. Stevens as having met with scant justice.

The real result of the whole matter is not very difficult to discover, however. The terms upon which Dr. Stevens was willing to undertake the test indicates a standpoint much less advanced than that which underlies some of his utterances; and there is unanimity in the opinion of some of the members of

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the commission—those who on entering it inclined to favor his views having no word of dissent from the condemnatory opinion of those whom he looked on from the start as his antagonists. The President of the Society in 1887, who, acting in Dr. Stevens's interest, was largely instrumental in setting the inquiry on foot, who was added to the commission as Dr. Stevens's choice, and who furnished nearly one-half of the cases studied, stated in the discussion that he had lost most of his faith, as he had seen no case much improved under Dr. Stevens's treatment.

To a looker-on there is not a little rather amusing in the controversy, as the matter may be termed. Dr. Stevens would seem to have been the first to call the attention of many of his fellow-townsmen to the fact that there are ocular muscles, and that these are not infrequently out of perfect order. His "discovery" and "the Stevens method" are quoted with awe by many who do not count themselves his disciples; and the zealous advocacy in word and deed of "graduated tenotomy," "the Stevens operation," by his followers has made "muscle-nicking" a town topic in lay circles. Patients as well as medical men have been infected by Dr. Stevens's enthusiastic confidence in his views, as evinced by their submission to series of operations sometimes numbering a dozen or more; and he has, at least, succeeded in awakening in some ophthalmologists a better appreciation of a neglected subject than would probably have resulted from decades of less sensational advocacy.

THE TREATMENT OF SNAKE-POISONING.

WHILE it is perfectly true that snake-poisoning is a fortunately rare occurrence in this part of the country, it is equally a fact that in the western portions of the United States persons suffer quite frequently from accidents of this character, and it is, therefore, of importance that some knowledge of the proper treatment of such cases should be sought after. Among the laity, particularly of the less educated classes, the survival of an animal or man who has been bitten by a snake after the administration of the simplest form of remedy is an argument of such *post hoc propter hoc* force, that the witnesses are forever willing to stake their reputations as to veracity on the efficacy of the measure or drug, and to act as missionaries in the promulgation of its valuable powers among their fellows. As a result of this, a very large number of so-called remedies are to be met in every region where poisonous snakes abound.

The well-known studies of Weir Mitchell, carried on during many years, culminating finally in the joint paper written with Reichert, reached three conclusions which are worthy of note in this connection; namely, that, as the poisons act directly upon the blood, disorganizing it, the fatality of the case must depend largely upon the quantity of the poison introduced into the blood, be the antidote what it may; that the secret of successful treatment lies in the antagonizing of the poison in the wound before the toxic agents gain entrance to the blood, and, above all, that the substance to be used for this purpose is permanganate of potash. It is unnecessary to add that stimulants, external heat, and other means dictated by common sense are to be employed.

We have called attention to this matter because in another column will be found a letter from Dr. Mitchell, which is self-explanatory, and one from an army officer who has had a wide practical experience concerning the matter under consideration.

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Meetings of November 5 and December 3, 1889.

THE PRESIDENT, GEORGE W. JACOBY, M.D., IN THE CHAIR.

IN March, 1887, a commission consisting of Dr. E. C. Seguin, Chairman, Dr. M. A. Starr, Secretary, and Dr. W. R. Birdsall, together with two ophthalmologists, Drs. W. O. Moore and David Webster, and two other gentlemen nominated by Dr. Stevens, viz., Drs. C. L. Dana and Frank P. Foster, was appointed by the Society to investigate, in conjunction with Dr. G. T. Stevens, the treatment of ocular irritations as a therapeutic measure in certain neuroses. This commission presented its report on the

TREATMENT OF EPILEPSY AND CHOREA BY THE CORRECTION OF OCULAR DEFECTS

in November, the discussion being concluded at the December meeting. Immediately preceding the reading of the report the following protest was presented by Dr. G. T. Stevens:

"Mr. President and Gentlemen of the Neurological Society: I respectfully protest against the reception of the report now announced, for these reasons: 1. That the commission having failed to perform its part of the agreement upon which the report is to be founded, the report is not now in good order; 2. Because the report is not a report on the proposition at issue; 3. Because the report is inconsistent with the facts and is mislead-

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ing; and, 4. Because it is an *ex parte* report and objectionable in spirit and motive."

The President then called for the report of the commission, which was read by its chairman, Dr. E. C. Seguin. The more important features of this report were as follows:

After a plan of proceedings had been agreed upon between the commission and Dr. Stevens, the members began to send patients to the latter in April, 1887.

Each patient was examined by two neurologists, who agreed upon the diagnosis and compiled a history of the case. The patient was then sent with the history to Dr. Stevens, who examined the ocular conditions. Subsequently, the ophthalmologists of the commission examined the eyes and reported their results to the secretary, who added these notes to the copy of the history in his possession. When an operation was undertaken, notice of it was sent by Dr. Stevens to the secretary, who, in turn, notified the ophthalmological members and also the neurologist who had furnished the patient. These members then attended the operation and noticed the conditions found in the eyes before and after it, sending their records to the secretary. Their non attendance, however, did not prevent operations from being done, and the records of these operations, as well as records regarding prisms and glasses prescribed by Dr. Stevens for the patient, the commission had been unable to obtain from him.

The patients from time to time visited the members of the commission by whom they were sent to Dr. Stevens, and notes of the conditions found were made and sent to the secretary. In the cases of epilepsy the record of attacks had not in all cases been kept in duplicate, Dr. Stevens having the record on the blanks furnished by the commission, and in these cases the records had not been accessible.

The total number of patients examined by the commission and sent to Dr. Stevens for examination was 28; 23 epileptics and 5 cases of chronic chorea.

All were found to have ocular insufficiencies. 5 were withdrawn without treatment; 3 a month after examination; 1 two months after; 1 three months after; 2 four months after; 1 five months after.

The reasons for withdrawal were as follows: 5 were unable to attend regularly; 2 were declined by Dr. Stevens on the ground of organic disease; 5 were withdrawn by mutual consent of member sending case and Dr. Stevens for satisfactory reasons, such as non-attendance; 3 were discontented because of increase of symptoms.

Hence, of the 28 cases there were only 14 who were treated for four months or over, and these were the only ones available for conclusions. These cases were tabulated, and the results summarized thus:

	Cured.	Much Improved.	Improved.	Unimproved	Unknown.	Total.
Chorea .	None.	1	2	2	0	5
Epilepsy .	"	None	3	5	1	9
Total .	None.	1	5	7	1	14

Of the six improved cases three had been presented to the commission by Dr. Stevens from his private practice, with no exact data, and the degree of improvement could not be ascertained. In the other three reported as improved, in one improvement began after thirty weeks, and the patient had never been entirely free from chorea for one month; she had at times been better under the ocular treatment, at times worse, even now having choreic movements, usually before menstruation. In another the chorea was only slightly less than at the outset. The sixth case, an epileptic, was having about the same number of attacks as she had had under bromide treatment, but far less than when under no treatment whatever.

Regarding those not improved, many of the patients would say they felt better, in spite of the written records proving the increased frequency of the attacks. This was in part due to increased hope and confidence in the success of the treatment, and also to the freedom from depression of mind and bodily functions produced formerly by the use of the bromides. Others had complained much of headache and vertigo which had appeared during the treatment, and in several diplopia had been produced and still remained. A few of the patients had been made exceedingly miserable by great increase in the frequency and severity of the attacks, which had finally necessitated an abandonment of the ocular treatment and a return to drugs. This statement applied to a number of cases which had been withdrawn.

It would be noticed that none of the cases having been cured, all remained indefinitely under treatment, a perfect permanent ocular equilibrium not having been secured in any case. If it were impossible to secure such equilibrium, a cure could not be expected, granting the theory of Dr. Stevens. If it were possible to secure such equilibrium, it was to be supposed that it could be secured in at least two years; yet four of these cases had been under constant treatment for two and a half years without this result.

In conclusion the committee expressed the opinion that as far as this investigation had warranted a conclusion, the method of Dr. Stevens does not afford a sufficient degree of relief to patients suffering from chorea and epilepsy to warrant its adoption or recommendation to the members of the Neurological Society as a means of cure or as the sole therapeutic measure in such cases.

Dr. Stevens then read a reply to the report of the commission, of which only the outline can be reproduced here. He said that whatever might have been the original condition of the majority of the cases sent to him during the first year, they had long ceased to be cases of functional disease. While, as a matter of fact, all of the patients were incurable with any of the ordinary methods of treatment, and while they had grown worse under such treatment continued during many years, they had in every instance, under his treatment, materially improved in general health and in the diseases for which they were treated. All this improvement had been brought about without recourse to the depressing effects of bromides or the toxic effects of enormous doses of arsenic.

The commission, according to Dr. Stevens, entered upon its work in a manner entirely inconsistent with the true spirit of inquiry. It pursued it in a manner calculated to induce vexation, misunderstanding, and controversy. It occupied many months in securing a few cases, and has never yet complied with its own stipulations. It has through more than two years been occupied in selecting the most unfavorable cases for treat-

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ment, and has taken the favorable cases to itself. The spirit of the report is calculated to produce prejudice and to mislead, and the report was made in violation of every principle of right or fairness. The report is represented as an investigation of two diseases, and not of a principle, in direct violation of the pledges of the commission. The commission repeatedly sent cases well known to be unsuitable for the inquiry and contrary to the articles of agreement and the private promises of members, and in this report paraded these cases in long detail with the effect of misleading the judgment of those unacquainted with the facts. It reported the results of treatment of the cases by minimizing the importance of the malady at the beginning of treatment and by magnifying the unfavorable conditions now existing. The results represented are not in conformity with the actual facts, but are grossly at variance with them. It reported as resulting from treatment unfavorable ocular conditions which do not exist, and in this respect made mistakes which should have been avoided.

In the discussion which followed, DR. HAMMOND said that he had seen eight of the cases described, the day before the meeting. The patients and their friends all admitted that the cases had been improved very much by Dr. Stevens' treatment, a fact which was at great variance with the statements made by the same patients to the commission.

DR. SEGUIN said that that part of Dr. Stevens's remarks which reflected upon the fairness and integrity of the commission needed no reply, the names of the members of the commission being a sufficient answer. Dr. Stevens's statements as to the evil effects of the arsenical treatment of chorea and of the bromides in epilepsy were altogether unwarranted by fact.

It was true that the commission had the greatest difficulty in inducing patients to undergo the treatment, but their failure to obtain twelve cases within the first few weeks was not through neglect or violation of the agreement. It was simply an impossibility to supply the necessary material in a given time—enough had been furnished in all. Dr. Stevens, in not furnishing data as to the course and progress of the cases, had violated the compact.

As far as his own cases were concerned, one had been nearly killed by the ocular treatment, which involved the omission of bromides. Another had been under ocular treatment for fifty-two weeks before improvement became marked. Another, a girl with chorea, showed no tangible improvement until after the lapse of seven months. His own experience in cases of chronic chorea, even when of five to seven years' duration, was that they were not merely improved very soon under arsenical treatment with rest in bed, but, as a rule, cured in from two to three months. This girl, though improved under the ocular treatment, had now transient diplopia for far and near, while the second case alluded too saw double on looking to the right. The improvement in these cases (which were the best of the series) could not, therefore be ascribed to the ocular treatment, but was to be attributed to improved health and time. Dr. Stevens had reported fifty per cent. of *cures* of epilepsy in his own (former) series of cases, but in the cases examined by the commission there was not one. Moreover, he had reported his cures taking place in a few weeks after beginning the ocular treatment, while in these cases, where improvement of any kind had taken place, many months had been required before decided change had been manifested.

DR. STARR, in regard to the remarks made by Dr. Hammond, referred to the records of the cases already read to the Society, which demonstrated in each case an increase in the number of attacks, in some of them to three times as many as formerly.

In one case, pronounced by Dr. Webster as normal ophthalmologically, and in every respect a purely functional case, Dr. Stevens claimed to have found optic atrophy, and called it an organic disease.

DR. BIRDSALL had seen one of the epileptics mentioned by Dr. Hammond as having reported improvement to him, and whose sister corroborated the patient's statement. He had asked the sister why she had made this statement. She had replied that she did not refer to the number of fits, which was unchanged, but meant that the patient seemed to be brighter without the bromides. The record showed, however, that the number of attacks had increased, and that the patient was in reality much worse under Dr. Stevens's treatment.

DR. DANA said he had been appointed on the commission by Dr. Stevens himself, and felt that he represented him in a measure, but naturally his chief object had been to obtain the exact truth in the matter. He had sent twelve cases of his own to Dr. Stevens, and had tried hard to get others to go; but he had seen no case much improved under Dr. Stevens's treatment.

DR. STEVENS said that when the investigation was commenced cases were accepted by the commission which ought never to have been taken. One was a pronouncedly organic case, and, in fact, not one of the cases was functional. The operative technique is exceedingly delicate and difficult, and such great skill is required that he himself did not yet claim to have attained perfection; but the more skilful the operator becomes, the more valuable will prove to be this therapeutic measure.

DR. L. C. GRAY did not believe that Dr. Stevens had substantiated his serious charges against the commission or caused any particular improvement in the cases. Esquirol showed in 1828 that temporary improvement took place in all cases of chronic epilepsy in La Salpétrière when treated by drugs known at that day. A decrease of from six to three fits daily could not be considered a permanent improvement, because such decrease was often spontaneous, and in some cases fits spontaneously ceased for years. He agreed with Dr. Seguin, that where improvement did not begin before fifty-two weeks after treatment had been begun, any improvement that might take place could not fairly be ascribed to the measure employed.

DR. SEGUIN said, with reference to the work done by Dr. Stevens, that all of the members of the commission had appreciated it highly, and had felt like adding something commendatory of his skill to the report, but refrained from doing so because, under the circumstances, it might have appeared hypercritical, and was really alien to the subject assigned to the commission, viz., the determination of results.

DR. J. L. CORNING thought that Dr. Dana's tribute to the good work done by Dr. Stevens was in exceedingly good taste. Dr. Stevens's work was unusually scientific

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and original, and there seemed to be very little of that sort of work done in New York, where compilation and the importation of foreign ideas were the order of the day. Hence, this discovery of Dr. Stevens ought to meet with wide recognition.

A motion to adopt the report of the commission was then carried by a vote of five to four out of the eighteen members present, the members of the commission refraining from casting their votes.

The following motion, made by Dr. Amidon, was unanimously carried:

"That the thanks of the Society be extended to Dr. Stevens for the assiduous labor he has devoted to the work of the commission, and that the Society assure Dr. Stevens that it highly appreciates the ingenuity and technical skill he has shown in the prosecution of his method."

CORRESPONDENCE.

SNAKE POISON AND ITS ANTIDOTE.

To the Editor of THE MEDICAL NEWS,

SIR: Some dozen people have sent me slips from the western papers as to specifics for snake bites. This nonsense about a remedy which is none at all, is a serious thing, and as some of those who write me are intelligent men, I enclose a note from one whose practical acquaintance with snakes none will dispute. All over our country are to be found, here and there, remedies reputed of value. I tested many, but always failed. I advise some of my too numerous correspondents to re-read my paper. They will find that it answers most of their queries. Very truly yours,

S. WEIR MITCHELL.

The following, one of the many slips spoken of, is taken from the New York *Tribune* of November 7, 1889:

"LOS ANGELES, CAL., Nov. 7.—Hereafter, when camping-out parties are formed, the demijohn full of snake-bite cure will have to be replaced by a bundle of weeds, for T. R. Fisher, an old citizen of Santa Barbara, who is familiar with the habits of the California Indians, claims to have found out their remedy for rattlesnake bites, which is a species of the plant Euphorbia. Dr. S. Weir Mitchell, of Philadelphia, recently stated, in an article which has been copied by the California press, that no specific was known for the virus of the rattlesnake. Mr. Fisher saw this statement and contradicted it, saying that the plant referred to was a sure cure, and he even goes so far as to state that the snakes themselves, when bitten, will make use of the remedy. This receives corroboration from Frank Smith, who lives at Whitewater, in San Bernardino County, on the edge of the Desert. He speaks most of the Indian dialects. The weed, he says, is a Euphorbia, and is common through California and Arizona. It is a vine-like plant, radiating from a centre, growing close to the earth; the leaf resembles the clover, but is less than half as large. When a stem is broken a milky exudation follows, similar to that of the 'milkweed' of the East. Mr. Smith gives this as the method of application: The green weed should be macerated in water, the skin about the bite scarified, and the pulpy mass of the plant placed on it and rubbed well into it; this should be repeated at intervals for fifteen or twenty minutes, and then a poultice of the same plant should be bound on and left. Mr. Smith holds that within forty-eight hours all symptoms of poison will disappear. So confident is he that, in *The Banning Herald*, he offers to settle the discussion with Dr. Mitchell in the Western style, by offering to bet $500 to $1,000 that with the Euphorbia he can cure any case of rattlesnake bite, and he will allow Dr. Mitchell to pick out his own snake. The Mexicans know the weed, and call it Golondrina."

DEPARTMENT OF STATE.
INTERNATIONAL AMERICAN CONFERENCE.
WASHINGTON, November 24, 1889.

DR. S. WEIR MITCHELL,

DEAR SIR: The above is an old story, known to army officers and others for many years. I heard all that was to be said about it in 1869, and so stated in my article "Snake Dance of the Moquis of Arizona."

Surgeon B. J. D. Irwin, U. S. A., has published a monograph on the "Euphorbia Prostrata" ("Golondrina" of the Mexicans, "milkweed" of Americans). It has been used, to my knowledge, by Mexicans and by Pinea and Apache Indians, but it is uncertain in effect and in no sense to be called a sure cure.

I remember an Apache boy who was treated by his own medicine-men; the leg in which the bite was, became paralyzed, atrophied and; I think, ulcerated: boy lived (Old Camp Grant, Arizona, 1870).

Another case, a dog; treated for rattleskake bite in neck; death did not occur for six weeks, but sloughing ulceration began, and ended fatally (Valley of Gila, 1871).

A third case—government mule bitten on muzzle—no benefit at all (Canon of Salt River, December, 1872). In the last instance, Golondrina was mashed up with human urine.

Please excuse my hurried letter, which may or may not contain facts already known to you.

Very truly yours,

JOHN G. BOURKE,
Captain 3d Cavalry,
U. S. Army.

NEWS ITEMS.

Academy of Medicine Election.—The New York Academy of Medicine at its meeting on January 2d elected the following officers: Vice-President, R. C. M. Page; Trustee, Lawrence Johnson; Members of Committee on Admissions, Augustus Caille and Thomas R. French; Member of Committee on Library, Egbert H. Grandin. Dr. W. G. Wylie read a paper on the treatment of surgical peritonitis, which was followed by a discussion.

The Christ Hospital of Cincinnati.—The *Lancet-Clinic* announces the inauguration of a new hospital at Cincinnati with the above title. It will be under the guidance of the Methodist Episcopal Church, but non-sectarian in its charity. This is the second hospital to be founded by that Church in this country, the first one being the Seney Hospital, of Brooklyn. Dr. C. G. Comegys is the senior consultant and chief director in the new Christ's Hospital.

New Appointment.—At a meeting of the Board of Managers of St. Luke's Hospital, New York City, held De-

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cember 27, 1889, Dr. T. Halsted Myers was appointed Attending Orthopædic Surgeon to the Hospital.

To Restrict Quackery in Maryland.—At a meeting of the Medical and Chirurgical Faculty of Maryland on January 2d, a bill was framed to be presented to the Legislature for the protection of the people from ignorant and fraudulent practitioners, and for the elevation of the profession in Maryland. The bill provides for a board of twelve medical examiners, nine to be selected from the regular physicians and three from the homœopathists. The appointments are to be made by the Governor; the regulars on the recommendation of a general convention of the schools, and the homœopathists on the recommendation of the State Homœopathic Society. The diploma of a college will not be accepted, and the applicant for license to practise must pass an examination in materia medica, therapeutics, and other branches of medicine. The board shall have the power of revoking the license of physicians given to inebriety, and also of persons advertising to cure special diseases which in the judgment of the board are incurable.

Physicians form a Trust.—It is stated that the doctors of Findlay, Ohio, have formed a "trust," and advanced the price of professional visits from $1 to $1.50 each. The announcement has caused great indignation among the people, as influenza is epidemic. It is charged that the physicians took advantage of the necessity which exists for their services.

Typhus Fever in New York.—Three or four cases of typhus fever have been discovered in the North Brother's Island Hospital of New York City. The infection is believed to have been imported on the steamship "Westernland" by means of the baggage of some German immigrants. An effort will be made to trace the course of each passenger, and their future medical history until the period of typhus incubation shall have expired.

The Presbyterian Hospital of New York.—The recent fire in the north building of the Presbyterian Hospital, New York, has proved a stimulus to the friends of the institution. It is reported that an anonymous donor has promised $250,000 for immediate use if other contributors will subscribe a like amount. The out-patient department of the Hospital, formerly used as a chapel, and the dispensary have been converted into temporary wards, with sixty beds, so that nearly all the former patients can be accommodated.

Obituary.—DR. LEWIS H. SAYRE, of New York, the son of Dr. Lewis A. Sayre, died suddenly on January 3d in his thirty-eighth year. Since his graduation from Bellevue Hospital Medical College in 1876 he had been associated with his father in private practice and college work. Death is supposed to have been caused by cardiac disease.

——— DR. GEORGE W. LAWRENCE, who died at Hot Springs, Arkansas, December 30th, was the senior resident physician of that place. He was born at Plymouth, Pa., in 1823, and graduated from the University of Pennsylvania in 1846. He went to California in 1849, and was on Governor McDougal's surgical staff in 1850. During the late war he became Medical Director in the Confederate service, and occupied other responsible offices until June, 1865. His residence at Hot Springs dates from 1859. His early life was eventful and somewhat adventurous, while his later years were replete with responsibilities and many well-earned favors.

——— DR. BREHMER, of the well-known Sanitarium for Consumptives at Göbersdorf, died on the 22d ult., from inflammation of the lungs, following a cold caught during a Christmas shopping trip to Breslau. In all probability he was a victim to the prevalent epidemic.

Post-graduate Instruction in London.—The clinical course of instruction for graduates begins its first term on January 13, Dr. Octavius Sturges opening it at the Great Ormond Street Hospital on the acute lung affections of infancy. Among the other physicians who will teach in this first course, are Drs. Bastian, Barlow, Buzzard, Beevor, J. K. Fowler, Gowers, T. H. Green, Hadden, Kidd, Angel Money, Ormerod, J. F. Payne, F. T. Roberts and C. Theodore Willians. On the surgical staff there will be Mr. Jonathan Hutchinson, president of the organization, and Messrs. Brudenell Carter, Marcus Gunn, Victor Horsley, W. Lang, J. H. Morgan, Edmund Owen, Bernard Pitts and A. Q. Silcock. Dr. J. Fletcher Little, Cavendish Square, is the secretary. The fee will be nine guineas for a course of seventy lectures, extending over a period of nine weeks.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 30, 1889, TO JANUARY 6, 1890.

By direction of the Secretary of War, the leave of absence granted E. A. MEARNS, *Captain and Assistant Surgeon*, in S. O. 244, October 19, 1889, from this office, is extended two months.—*S. O. 303, A. G. O.*, December 30, 1889.

By direction of the Secretary of War, Par. 1, S. O. 180, Department of the Missouri, December 6, 1889, transferring NATHAN S. JARVIS, *First Lieutenant and Assistant Surgeon*, from Fort Lewis, Colorado, to Camp Wade, Kingfisher, Indian Territory, is confirmed.—Par. 6, *S. O. 303, A. G. O.*, December 30, 1889.

By direction of the Secretary of War, the leave of absence granted JULIAN M. CABELL, *First Lieutenant and Assistant Surgeon*, in S. O. 249, A. G. O., October 25, is extended one month.—*S. O. 304, A. G. O.*, December 31, 1889.

By direction of the Secretary of War, ordinary leave of absence for two months is granted JUNIUS L. POWELL, *Captain and Assistant Surgeon*, in extension of the leave of absence on account of sickness, granted him in S. O. 258, November 5. 1889, from this office.—Par. 1, *S. O. 1, A. G. O.*, January 2, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING JANUARY 4, 1890.

CLARK, JOHN H., *Medical Inspector.*—Ordered to the U. S. S. "Baltimore."

DIEHL, OLIVER, *Passed Assistant Surgeon.*—Ordered to the U. S. S "Baltimore."

STITT, E. R., *Assistant Surgeon.*—Ordered to the U. S. S. "Baltimore."

SMITH, HOWARD, *Surgeon.*—Ordered to the U. S. S. "Alliance."

GATEWOOD, J. D., *Passed Assistant Surgeon.*—Ordered to the U. S. S "Despatch."

TRYON, J. R., *Surgeon.*—Ordered to the Naval Medical Examining Board.

SCOFIELD, W. K., *Medical Inspector.*—Ordered to special duty at New York City.

GUITERAS, D. M., *Passed Assistant Surgeon.*—Ordered to the Naval Hospital, Philadelphia, Pa.

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVI. SATURDAY, JANUARY 18, 1890. No 3.

ORIGINAL LECTURES.

THE TREATMENT OF PNEUMONIA BY VERATRUM VIRIDE AND DIGITALIS.

Abstract of a Lecture
Delivered at the University of Pennsylvania,

BY H. C. WOOD, M.D., LL.D.,
PROFESSOR OF THERAPEUTICS.

PASSING from the subject of digitalis in cases of heart disease, let me call your attention, gentlemen, to its use in some cases of acute disease. Just as in heart disease failing heart-power is a positive indication of the necessity for the use of digitalis, so in acute disease failing heart-power is a reason for its use. In order that you may better understand the principles that govern your employment of the drug in cases of acute heart-failure, let me take the subject of pneumonia. It is unnecessary for me to refer to the symptoms in detail, and I will do so only so far as to enable you to apply the principle to diseases of that class. In order better to understand the use of this drug in pneumonia, it seems to be essential that you should have knowledge of the use of drugs whose effect is the opposite of that of digitalis; I therefore ask your pardon for bringing forward here certain general facts in regard to drugs which are not cardiac stimulants, but are cardiac sedatives. Let us suppose that we have a drug which is a powerful cardiac sedative, which is the opposite of digitalis, and which is also a powerful vascular sedative, causing dilatation of the bloodvessels. Such a drug we find in veratrum viride.

Now we take a case of ordinary pneumonia. We are called to it in the very flush of the disease. We find that the chill has passed by, that the patient has a high fever, that there is a high, bounding pulse, full and strong. We notice, also, that the lower lobe over the left lung is full of blood. What has brought the flux of blood to that point? There has been everywhere in the lower lobe of that lung a dilatation of capillaries, a vacuum, the effect of a relaxation of pressure. The heart being excited and the arterial pressure being continued, these relaxed, dilated vessels draw the blood into them, the whole lobe becomes full of blood, while the arterial or capillary system everywhere is contracted save only in this lobe over the lung. Under such circumstances digitalis is to be used. In the first place, it depresses and quiets the heart, it reduces the arterial pressure and drives the blood into that territory where resistance to blood entrance is slight. But it does more than this. It builds up the capillaries all through the system. You will remember that the relaxed vessels of the abdomen are of such size that they are capable of holding all the blood in the body. You can put all the blood of a man, after death, in his abdominal vessels, and they will not be over full. Now when, under the influence of a dose of veratrum, the heart has been lowered in power and the whole abdominal cavity has been opened wide, there is then a great suction of blood away from this lung. The blood that fills and chokes up this territory goes off to the abdomen, and you thus get an effect which, in days gone by, our ancestors got by the use of the lancet. You bleed a man, not into a bowl, but you bleed him into his own abdomen; and after the danger has passed by, you have not taken power from the general system. You depress, but you do not exhaust, the patient. Thus, in pneumonia, the period comes when power is needed to support the disease; it does not find the patient wholly exhausted by reason of the bleeding, but by the use of veratrum the functional activity returns. Bear in mind that depression is not exhaustion—that depression is the strong man's safeguard, that exhaustion is the strong man's danger. In pneumonia, therefore, if you have this condition of depression from veratrum early in the attack, you have reduced the congestion and possibly limited the force of the disease. But let the case go along. By and by a time comes when half, or a third, or perhaps the whole of one lung is consolidated. What does that mean? Suppose that we have a pair of lungs each of which is full of capillaries, the cavity between them affording a channel of communication between the right and left sides of the heart. We will say that in the upper part of the left lung there is a channel of communication, which is represented by 100, and in the lower lobe one of the same size, and again one in the right lung. Thus there is normally a cavity or a channel, represented by "400," through which the blood flows from the right to the left side of the heart. There comes an outpouring of plasma; all these capillaries are pressed upon—practically they are obliterated; and if a whole lung is obliterated, as sometimes happens, there is only half-communication between the right and left sides of the heart. Do you not see that, under these circumstances, the right side of the heart is placed under a perpetual strain, and that the strain increases all the time, from a little failure at this moment to throw back a little blood into the venous system and at the next moment a little failure to throw an increase of blood to the venous system? By and by the pressure is all on the right side of the heart, and the patient dies. Under these circumstances you have the right side of the heart becoming angry, though impotent in its rage, acting spasmodically and in every possible way except the right and proper way. You give a full dose of the digitalis, and continue its use until you have some evidence of its presence. The effect will be that the right side of the heart will begin to beat slowly and with long pauses. There is a driving force behind the blood, which throws it through this narrow channel, fills up that left ventricle and restores the balance of the circulation. You cannot do this with any remedy so well as you can do it with digitalis. It is more powerful than any other, though slow in action. Alcohol does not do this. Alcohol is a

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stimulant of the general system. It has some power over the heart, but it is a power that is a weakness as compared with the power of digitalis. Therefore, in advanced pneumonia there is no remedy that will take the place of this drug. But bear in mind that you have to give it in sufficient doses to produce an effect. If you are afraid of it, if you give it homœopathically, if you merely rub the back of the patient's neck with the bottle, the disease will hold its own. Here, as in all cases where you are using digitalis fully and freely, you watch the pulse, and will remember that its influence is to determine your treatment. Having given the digitalis, you may find, at eight o'clock in the morning, when you visit the patient, that you have a distinct digitalis pulse; then you will wait until three o'clock, or perhaps until six o'clock, and, if you find that your digitalis pulse is losing, you will throw in your dose of digitalis—your doses being guided always by the pulse.

Digitalis is useful in advanced stages of typhoid fever, when the pulse fails. It is useful in any acute disease when the pulse fails. But remember always that experiments have shown that a very high temperature renders the system less susceptible to the action of digitalis. It is not true that digitalis will not act when the temperature is up. I have over and over again seen it act with great power in cases in which the temperature was 105°. This high temperature simply makes the heart more rebellious; it does not suspend the activity of the digitalis.

In acute syncope digitalis is of value. Recollect, however, that it is very slow in its action—that in order to get any effect from it you must give it hypodermically.

EXTREME BLOOD-PRESSURES.

Notes from the Clinics of Dr. S. Weir Mitchell at the Infirmary for Nervous Diseases of the Orthopædic Hospital.

[Reported by GUY HINSDALE, M.D.]

THE interesting case which I present to you to-day I bring before you chiefly for the purpose of calling your attention to its peculiarities, some of which may have escaped your notice. I do not purpose dwelling on them for the length of time I would give to them in a lecture, but simply to call your attention to the facts before us. For example, here is the case of Mr. B. G., aged forty-one, who is suffering from paralysis of the right side of the body, with aphasia, due, I think, to the occlusion of an artery in the left side of the brain. I do not intend to go into the details of the case, but I will state that he has had albumin and granular casts in his urine for more than a year, although he has never suffered in any other way up to January 9, 1888.

At twelve o'clock of that night he had the attack of hemiplegia of which I have just spoken. He was unconscious for two days, but does not think that he was convulsed. The urine was drawn for three weeks. After the fourth week he was able to walk, and gradually regained power both in the legs and arms. The dynamometer showed 90 on the right side and 95 on the left. There was no disturbance of sensation or of intelligence. There were no hallucinations, and he slept well. There was no vertigo. The speech was slow. Station fair. Knee-jerk ++ on both sides; reinforcement normal. He hesitated in speech and failed to find some words, although he could get the desired word after a good deal of effort. There was a slight apex systolic murmur.

The disks of both eyes were very cloudy on the edges and somewhat swollen—the left more than the right. The central veins were fuller than normal. There were large quantities of albumin in the urine, and a considerable amount of granular casts at all times. The patient, however, is very much better than when he entered our wards. He walks better and is less irritable. There is at present just a trace of albumin in his urine.

I have omitted his skimmed milk at present (for he takes nothing else), that you may see the condition to which I desire to call your attention. I have also had the iron stopped for three or four days. He now shows to an imperfect degree what he showed to excess when he entered the hospital. As you will observe, on the right side of the head the temporal artery is large and remarkably serpentine. If you compress its course to absolute obliteration of the blood-flow, it continues to pulsate beyond the point of pressure; moreover, it pulsates strongly. This must, of course, be due to the fact that, owing to the great intravascular pressure, the anastomosing vessels below the point compressed convey to ultimate branches of the temporal the cardiac impulse, and perhaps, too, all are dilated, as the temporals are most certainly.

It is not a little singular that, after the first few days of treatment, this symptom, having disappeared on the right side, became distinctly visible on the left. If you examine the pulsations in the arteries at the wrist you will find that they, too, are full, strong, and difficult to obliterate; but when pressed upon so as absolutely to stop the blood-current, we do not see the same phenomenon as in the temporals, where it is obvious even to a careless observer. When, two years ago, I first saw this phenomenon, it interested me greatly, as this evidence of very high tension is rarely found, except in very old people with diseased arteries, or in certain cases of Bright's disease. The case before you illustrates it admirably.

Without remarking further upon this special example, I desire to call your attention to one as interesting. The patient some of you saw last year. He is a merchant from New England, aged thirty-eight, who came here complaining of intense pain in the head. These headaches were so violent as to make it necessary for him to remain in bed for several days at a time. They had been attributed to different causes, but, strangely enough, never to the right one, until he came hither in March, 1887.

The man was tall—six feet two inches in height—and extremely pallid. The blood-corpuscles, which were counted by Dr. J. K. Mitchell, were 4,100,000 per c. mm. and the hæmoglobin 95 per cent. The urine was clear and pale. Sp. gr. 1012, with abundant albumin and epithelia of yellowish tint. There were uric acid, some blood-clots, much granular matter and numerous casts.

The heart was large and irregular in action. There was a strong apex systolic murmur heard around under the left shoulder.

Dr. de Schweinitz made careful examinations of the eyes. His statement, which I append below, shows the remarkable changes in this interesting case. The tension in the temporals exceeded anything I have ever seen.

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It was difficult to compress them, and when we did so the throb beyond the point of pressure was almost as great as though no interruption had been made to the arterial current. At first it was possible to feel pulsations when, with the compressing fingers above and below, two inches apart, we sought between them the evidence of continued pressure. You could notice in this case, as in the one last related, the enormous amount of tortuosity, the left artery sometimes exceeding the right as to this, or, again, the right being the larger and more crooked. The tension in the radials was also the greatest I have ever met with. It was difficult for me to understand how, with so much pressure, it was possible for life to go on and for vessels to remain unruptured. This is the only case in which I found it impossible to stop pulsation in the radial beyond the finger, after all circulation had been locally obliterated by pressure. Since then I have seen it twice. This phenomenon was not as marked as in the temporals, but it was sufficiently apparent to anyone.

This sign of high tension is a somewhat valuable symptom, because it disappears with great readiness under certain treatment; and this fall of pressure is an excellent indication of improvement on the part of the patient. I may as well say to you here that in nearly all the cases of very high tension with renal disease, there is also retinal trouble—at least it has so appeared to me. While this tension is thus greatly increased beyond the normal blood pressure, it is usually capable of being more or less controlled by a number of means; thus, in the last case mentioned, the individual having been put on a diet of skimmed milk alone, the tension in the radials fell from 600 of an arbitrary scale to 450 within a week. When to this there were added thirty-five drops of the tincture of the chloride of iron, four times a day, with an increased amount of milk, another week brought the tension down to one-half of what it was at the beginning of this diet. The headaches rapidly improved and the sluggish condition of the extremities disappeared.

Finally, his eyes to a large extent recovered their power of vision, as to which I leave Dr. de Schweinitz's notes to tell. It was, however, a hopeless case and has since died, but life was undoubtedly prolonged for more than a year, and he escaped great suffering. He was enabled, also, for a time to go back into active business and to take such care of his large affairs as was necessary for the future protection of his family. He lived on milk for many months and took tincture of the chloride of iron in doses of half an ounce a day.

Examination of eyes by Dr. de Schweinitz:

January 22, 1887. R. E. vision equals 1/6 of normal. L. E. vision equals 1 of normal. Extensive albuminuric retinitis. Enormous swelling of the optic disks. In the R. E. 1.12 mm.; L. E. 1.00 mm.

February 14, 1887. R. E. vision equals 1/4 of normal; L. E. 1/4 and part of 1/3 normal.

March 23, 1887. Vision in the R. E. equals 1/2 of normal; the summit of the disk still unchanged. L. E. vision 1/2 of normal, with part of 2/3 of normal; disk distinctly less swollen—0.92 mm.

April 13, 1887. Vision in the R. E. 1/2 of normal, and swelling of the disk 0.92 mm. Vision in the L. E. 2/3 of normal; swelling of the disk 0.85 mm.

The chief changes observed from his first visit, January 22, 1887, to his last visit, May 31, 1887, were a gradual lessening in the size and extent of the infiltrated optic disk, causing the diminution in elevation noted above; the clearing up of the retinal infiltration in the neighborhood of the macula causing the improvement in direct vision, which, at the beginning, was only 1/6 of normal; but at the last visit was full 2/3 of normal. No special changes were noted in the vessels of the retina, except that as the infiltration lessened, outlines previously hidden became visible.

In conclusion, I desire to add, in brief shape, the case of L. P., aged twenty-six years, clerk. He presented all the signs of advanced Bright's disease—enormous tension, great œdema, diseased heart, and total blindness. I have mislaid Dr. Dyer's notes of the eye-changes. My own records state that his eye-ground was disfigured with hemorrhages, old and new; and he was unable to go about the streets alone, as he could barely distinguish day from night. Tinct. ferri chlor. had been used up to one ounce a day, with no relief.

Under diet without meats or eggs, and seven drachms a day of tinct. ferri chlor., he regained sight so as to be able to keep books for several months, and supposed himself well; but, as usual, at last the symptoms returned. The sight, however, remained good up to death, two years later.

In one of the hospital cases I used nitrous ether alone, and then other iron salts, but got no such results as from old tinctures of iron. Of course, tincture of iron has been much used in these cases, but perhaps not in heroic doses.

The ether present in tincture of iron is usually held to be responsible for some of its effects. Mr. Frank E. Morgan has been kind enough to distil for me an old tincture of the chloride. He obtained early an ounce of ether from one pint of tincture. The amount is so small that it seems difficult to see how the fraction of it in sixty grain doses of tincture could be a powerful agent. It did not seem to be such when used apart from iron.

The process was conducted very carefully, the distillate being collected in fractions and identified. At no time, either by physical or chemical tests, could any ether be found other than nitrous ether. Mr. Morgan writes that while it is claimed that very minute quantities of other ether or ethers are at times present, he has not found any positive statement as to their character. He adds, that from the fact that an excess of hydrochloric acid is used in preparing the tincture, it is often inferred that ethyl chloride or hydrochloric ether is present, but as this ether is formed with difficulty, and perhaps only in presence of free chlorine, it is extremely doubtful.

I used this ether in twenty to thirty minim doses in the cases of excessive blood-pressure with little effect. With the practical results of the treatment of these cases I am well pleased, but it seems to me that we are left without an explanation of the facts. It is generally accepted as true that the salts of iron raise the blood-pressure; as regards abnormal pressures in renal disease the reverse is correct for perchloride of iron in alcoholic solution. Whether other astringent ferric salts act in like manner I do not yet know, nor is it quite clear how the lowering of pressure is effected, but of its amount and permanence you have been able to judge.

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THE PRESENT EPIDEMIC OF INFLUENZA.

A Clinical Lecture delivered at the Pennsylvania Hospital, January 11, 1890,

BY J. M. DA COSTA, M.D., LL.D.

[Reported by WILLIAM H. MORRISON, M.D.]

GENTLEMEN: The occurrence in our midst of an epidemic of catarrhal fever or influenza, and the fact that we have had a large number of cases of this disease in our wards, have suggested the propriety of giving you a lecture on the subject, in which the prominent groups of the disease might be laid before you, and which would serve to illustrate not simply a single case, but the varieties of this strange malady.

It is not my purpose to treat the subject historically, but rather to view it clinically. I have myself passed through more than one epidemic of catarrhal fever, and can claim familiarity with its symptoms; and comparing what I have seen in previous epidemics with what I have found in this, I shall be able, as I proceed, to point out how the present epidemic differs from those of previous years.

This widespread malady, which has committed such havoc on the Continent of Europe, and which has proven itself here, in the last month, so destructive to comfort and so perilous in its secondary consequences, is of uncertain origin. It comes; it goes. It comes without warning; it disappears, leaving behind it sporadic cases, but speedily loses all trace of its epidemic form. As I have told you, however, I propose to treat the subject from a clinical standpoint, rather than view it pathologically or in its broad general aspects. I shall, therefore, introduce my subject by showing you a few cases which illustrate different types of the malady.

CASE I.—This man, a German, was admitted to the hospital January 9, 1890. His family history is good. He does not drink, and has had no severe disease. Eleven years ago he had some kind of fever, but has not been ill since then. The present illness began abruptly, December 25th, with chilly feelings up and down the spine, followed by headache and some cough, which occurred in paroxysms, and was especially severe in the evening. There was no expectoration. He had a general sore feeling. There was slight constipation, and soreness over the abdomen, which was thought to be due to the cough. The eyes and nose discharged freely. He consulted a physician, and in a day or two improved; all the time he continued at work. January 6th he began to show signs of a relapse. All his previous symptoms returned with great severity, and he became so weak that he could not stand. On admission into the hospital he had cough, a sore feeling all over, the eyes discharged freely, the temperature was 99°, pulse 76, and respiration 28. A few bronchial râles could be detected. The tongue was tremulous, flabby, and slightly coated. The knee-jerk was present; the urine was of a dark amber color, specific gravity 1034; no albumin.

Examining him this morning we find that the tongue is covered with a white coat. He still has watery eyes and cough; the temperature is 98°; he has harsh respiration at the base of the left chest; at the lower part of the right chest posteriorly the respiratory murmur is feeble, and on percussion the resonance is not so great as on the left side. We find the same signs anteriorly. There is, therefore, some congestion of the lower part of the right lung. The heart sounds are normal so far as murmur is concerned, but the first sound is rather feeble, which corresponds with the very compressible state of the pulse. The bowels still tend to constipation. He does not perspire except after the paroxysms of coughing.

CASE II.—This man is thirty-three years of age. The present attack began two weeks ago with dizziness, some vomiting, and cough. The bowels were constipated. There was sore throat and coryza. Although a strong, robust man, he rapidly grew very weak. There was profuse sweating after coughing. There was no special shortness of breath. There was general soreness, with a great deal of pain in the bones, especially at the wrists; none in the spine. The great debility was the most marked symptom in this case, and was the more noticeable on account of the former condition of the man. A few days ago he had repeated chills and tremulousness of the hands. The constipation has, in the last day or two, been succeeded by diarrhœa. When admitted, the temperature was 98°, the pulse 76, and the respirations 20. The patellar tendon reflex was present. The urine was dark, with a specific gravity of 1030, of acid reaction and contained a trace of albumin, which still persists. It is but fair to state in this connection that the man has been a free liver. He also showed signs of a good deal of catarrh. The eyes were watery. Coryza existed in the early part of the attack, with considerable sneezing.

He is still very weak. This morning the temperature is 98.4°; the pulse is 60 per minute and is extremely weak; it is absolutely thready. The first sound of the heart is so feeble that it can barely be detected. This is very much like the heart we get in an advanced stage of typhoid fever, barring, however, the difference in rapidity. Here the heart is slow, while in typhoid fever it is usually rapid. There is no murmur, but a distinct, sharp second sound. There is harsh respiration on the left side, and some impairment of resonance below the area of harsh respiration, showing congestion. Râles were noticed, but I do not hear them this morning. The splenic dulness extends just to the margin of the ribs. The hepatic dulness is normal.

In the way of treatment he has received for the throat a gargle of salicylate of sodium with glycerin and water. He has taken twelve grains of quinine a day, and a mixture containing muriate of ammonium. This cough mixture need now be given only occasionally, and we shall order him four ounces of whiskey a day and one one-hundredth of a grain of strychnine every fourth hour. He will also have turpentine stupes applied to the back of the chest, especially on the left side.

There are so many cases of this malady in the hospital that, in one clinic, I could hardly exhaust them. But I will show you one more case, which is of great therapeutic interest.

CASE III.—This man is twenty-six years of age, and has been in the hospital since December 26th. When admitted, his temperature was 100°, his pulse 88, and his respiration 34 per minute. His eyes were injected and his tongue coated. His heart's action was weak, and there was noticed reduplication of the first sound and a faint systolic mitral murmur. The man was very weak. The lungs were normal, with the exception of a few

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mucous râles. His symptoms were those of such prostration that he was thought to be in the so-called typhoid condition, and the opinion was entertained that it might possibly be a case of latent typhoid fever. Indeed, he was so drowsy that we could not get any account of his illness, and this added much to the difficulty. Watching the man, we found that there was not the least evidence of typhoid fever. There were no spots, no diarrhœa, and the splenic dulness extended only slightly below the margin of the ribs. The peculiarity of this case is that while, almost from the beginning, the temperature has been between 98° and 99°, and the pulse extremely feeble, he was dull, his pupils somewhat dilated, and he was extremely delirious. He could not sleep at night, and the only sleep obtained was by the use of small doses of chloral. This, with the prostrated condition, suggested the possibility of typhoid fever. As his mental condition improved, it became clear that this was not the case. He told us that he had had symptoms of coryza, pain in the bones, and all the symptoms of the prevailing epidemic.

Let us see what his condition is to-day. He, too, has a weak first sound, but not so weak as in the preceding case. He has a compressible pulse, moderately weak. The lungs are clearer. He has had no cough since admission and the mind is clear. I think that this is an undoubted case of influenza.

What I desire particularly to call your attention to is the violent and persistent delirium which was present, and the manner in which it was relieved. When I first saw the man I was struck with the sluggish, dilated pupil; the feeble pulse, and the extreme delirium, with a temperature which was normal or slightly subnormal. It at once occurred to me that here was a case of delirium from inanition. This I have seen more than once at the end of an attack of typhoid fever, or any other depressing disorder interfering with nutrition, such as cancer of the stomach, where the brain is disturbed because it does not get a proper amount of stimulus of blood. I had the man placed on liberal supply of food given at short intervals and associated with stimulants, and in twenty-four hours the delirium had passed away. It was clearly a case of delirium from inanition. Do not misunderstand me. Do not suppose that this is a specific delirium. As I have said, I have seen this delirium in other typhoid conditions, using this term in a wide sense, as a result of the brain being illy supplied with its proper stimulation of blood. The man is now convalescent, and simply requires a chalybeate tonic. We shall give him five grains of tartrate of iron and potassium three times daily. The stimulation with a liberal supply of food will be continued.

Leaving these cases, I shall make some general remarks upon this disease, to which, for some absurd reason, we have applied the French name "la grippe," which means nothing so far as the disease is concerned. Influenza or catarrhal fever, as is illustrated by these cases and many others that I have lately seen, almost invariably begins acutely. Nearly all of the cases that I have met with started suddenly in persons previously in good health. One case came under my notice where a physician was so abruptly seized with pain in the back that he had to lie down on a bed, and with difficulty could leave the house. In other instances, not quite so marked, the severity of the pain in the back has been great and has been the first manifestation of the disease. The pain is often referred to the middle of the back in the dorsal region, and it is quite commonly observed that starting in this position it spreads downward into the legs. As described to me, the pain is at times sharp, with a dull pain persisting. The patient is never free from pain, which occasionally rises into acute exacerbations. While many of the cases begin with pain in the back, they soon have pain in the bones followed by headache and moderate fever, and then there are or are not catarrhal symptoms.

I have partly traced the development of the disease in these patients; let us now pay some attention to the character of the fever with which these painful sensations soon become associated. In the majority of instances the fever is moderate and lasts about three or four days. The fever is at its height in from twenty-four to thirty-six hours; then it slowly subsides, and the temperature may go below normal. In one case, it passed to 96° and there was profuse sweating, something like a crisis taking place. During the period of highest temperature lasting thirty-six or possibly forty-eight hours, there is only the ordinary variation of about one degree between the morning and evening temperatures. There is really a slight continued fever, and not a fever with remissions and exacerbations as in malarial fever. As a rule, the temperature does not exceed 103°; but, by way of variety, I have in this epidemic encountered a few cases in which the temperature at the onset unexpectedly shot up to 105° and the next day went down to about 100°, and then the case ran the ordinary course, terminating in recovery. In two of these cases bloody sputum or pure blood was at first expectorated.

With the fever we have the ordinary concomitants; high colored urine of a high specific gravity, without albumin. In one of the cases before you there is a trace of albumin in the urine, but as the man is of rather intemperate habits, it is a question whether it does not belong to the individual rather than to the disease.

Another peculiarity about the disease is the occurrence of catarrhal symptoms in the eyes and nose with cough, which is frequently laryngeal rather than bronchial. These catarrhal symptoms are, however, often absent. Some of the worst cases that I have seen have had no catarrhal symptoms whatever in the eyes, throat, or anywhere else. When the catarrhal symptoms are present they are more apt to involve the eyes, nose, throat, and larynx, than the bronchial tubes, although a fair proportion of cases have catarrhal bronchial râles, and some have even congestion of the lungs, as illustrated by the cases before you. In a few instances epistaxis comes on, and with the occurrence of high fever and debility you are irresistibly made to think of beginning typhoid.

One of the most singular features of the present epidemic is the prevalence of the nervous symptoms. As I have stated, I have passed through other epidemics of catarrhal fever, but this one seems to be stamped by the prominence of the nervous symptoms. These are shown by the violent headache, the severe pain all over the body, the pain in the spine travelling downward, and also by what I have seen in quite a number of cases, hyperæsthesia or general sensitiveness of the surface. This is something more than what might be attributed to the efforts of coughing. Then, too, in some of the

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cases, there is delirium, not simply the delirium of inanition, as occurred in one of the cases before you, but a delirium with violent headache, this delirium sometimes taking strange forms. In one case, that of a most refined lady, who when well would hardly recognize an oath, when she became delirious from an attack of influenza, swore at her doctor every time he entered the room. I have been told of instances in which patients have lost their minds from the violence of the headache and the delirium. Besides the delirium, there are in some cases convulsions. About a week ago, I was called by Dr. Rosenthal to see a young man who, while in perfect health, was seized with violent headache, severe pain in the back, pain in the limbs, slight catarrhal symptoms, considerable congestion of the lungs, but no pneumonia. Almost from the onset he had spasms in the arms.

The spasms were most marked in the left arm, although the right was also affected. He was very restless, and slightly delirious, but not markedly so. His temperature, almost from the beginning, was 97°. I found him with pupils somewhat dilated and head slightly rigid, and the presence of cerebro-spinal fever at once suggested itself; but further investigation showed that this was not the case. There was no eruption; the spasms were limited to the arms; there was congestion of the lungs; and, above all, there was no fever, the temperature remaining about 97°. The only thing that gave any relief from the spasms was chloral. Notwithstanding the fact that atropine and opium were used hypodermically this patient gradually sank under the violence of the disease. I know of one case in which paralysis of the lower extremities has followed influenza. It is slowly yielding, and the patient will recover. This case had a marked history of a preceding attack of influenza. I know of several others in which convulsions occurred. The kind of cases I have just mentioned have probably given rise to the idea with some that cerebro-spinal fever and influenza are the same disease. The prostrating influence of the malady on the nervous system is also shown by the fact that patients often stagger on getting out of bed. A prominent lawyer whom I recently attended, thinking that, as he was compelled to remain in the house, it would be a good time to get up his work, sent for his papers, but a few minutes' attempt cured him of this idea and he was glad to lie down. This debility remains for a long time, and is often associated with considerable sweating. The pains often remain, and do not necessarily pass away on the subsidence of the rather short fever. In some cases profuse and persistent sweating is also very common during convalescence, and the patient looks anæmic and miserable. I have seen the knee-jerk absent at the height of the malady, but in the majority it is preserved. Cramps in both calves and shoulders, as well as in the chest muscles, have been reported to me by a physician as happening after the febrile stage had passed.

The main *complication* of ordinary catarrhal fever is, as you know, pneumonia, or what is called pneumonia. Looking over the records of boards of health of different cities, it will be found that the deaths from pneumonia have nearly doubled. What is called pneumonia must therefore be set down as one of the chief complications. You notice that I say "what is called pneumonia." A great many of these cases are simply heavily congested lungs, with great debility, the lungs seeming to collapse. There does not seem to be a true process of pneumonic exudation. While in many cases there is slight dulness on percussion, yet it is not absolute, and the high-pitched bronchial breathing of croupous pneumonia is found in only a few instances. There is no consolidation. This has been the characteristic in most of the cases that we call pneumonia. It is probably proper to speak of these cases as pneumonia, but I want you to bear in mind the difference between this condition and ordinary croupous pneumonia.

Let me call attention to another peculiarity that I have noticed in a large number of instances. A great many persons when seized, and often during the height of the attack, complain of violent pain in the left side, but I have not found any friction sounds, save in one instance, and this may have been accidental. There is want of expansion of the lower part of the lung, usually on the left side, associated with this violent and persistent pain, which makes the patient think that he has pneumonia or some other grave condition of the lung.

We know nothing of the cause of this disease. It is epidemic, and I think myself that it is feebly contagious. It would be an admirable thing if some of our over-filled treasury could flow into the channels of science, and that a commission be appointed to investigate this disease bacteriologically and chemically. We accept the microbic nature of its origin, but it has not been proven.

The prognosis is favorable, but the general mortality is increased by the epidemic. This is because persons previously diseased are carried off. For instance, in these two cases with feeble heart, if any unusual exertion were made the patients would probably die. If an elderly person with fatty heart contracts this disease, for it is no respector of age, he would be in imminent danger. We call this heart failure, but these hearts are diseased and enfeebled still more by the malady. In the two cases before you, I think from the previous condition of the patients and their age that there was no feeble heart prior to the present illness.

I have mentioned relapse. I have seen few distinct examples of this. One was that of a lady who had her first attack in the country and came to town to break it up. She was well for two weeks when she was attacked the second time. Another case was that of a gentleman who was suddenly seized with the relapse while in church, two weeks after the first attack. In a third case pneumonia occurred in the relapse. The longest interval I have known was two weeks, the shortest five days. To prevent relapse, great care is necessary in not going back to work too soon, and not exposing one's self to wet and cold, and with this there should be a judicious use of tonics, and even of stimulants.

Now, a few words in conclusion with reference to the treatment. The treatment must, of course, be the ordinary treatment of catarrhal affections. For the relaxed and irritated throat I have found nothing so serviceable as a gargle of salicylate of sodium, glycerin, and water. For the nasal catarrh, which at times is very unpleasant, I have found that a two per cent. solution of cocaine does the most good. The bronchial catarrh should be treated as any other bronchial catarrh, according to the exact seat and the number of râles. A good deal of the paroxysmal cough is laryngeal, and you will find that small doses of opium at night, or bromide and

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opium, or what I have employed in a number of cases, broken doses of Dover's powder, will give good results. One-fourth of a grain of codeine, repeated according to the circumstances of the case, is often useful; it allays the cough, induces sleep, and does not cause much sweating. Let me say here, that while perhaps the routine practice of using diaphoretics in these cases is useful, yet such drugs must be used with judgment. In some cases there is a great tendency to sweating, and you do not want to increase it, as it rather adds to the debility. The diaphoretic must be adapted to the individual case, not employed too actively, and not at all where sweating is a prominent symptom.

The debility must be borne in mind, and it is good practice to give sulphate of cinchonidine or quinine, ten or twelve grains daily. Nourishment should be kept up, and the action of the bowels looked after. The patient should not be overpurged, for, in some instances, diarrhœa is associated with the malady.

For the headache and the pain in the bones I have found two remedies of especial advantage. One is antipyrin in five-grain doses, with a grain or two of quinine to prevent depression, repeated every two or three hours until the headache is relieved; the other is phenacetin in five-grain doses. In one instance where these two drugs failed to relieve the headache I found gelsemium to answer.

The general strength and the circulation must be looked after, and especially during convalescence the patient must receive nutritious food, alcohol, small doses of strychnine, and, later, iron.

I shall not speak of the treatment of the complication pneumonia, but let me point out, in concluding these remarks, that you should keep your patients for a long time on tonics which may prevent relapse, and, indeed, it may be a question whether it would not be advisable when the disease makes its appearance in a household to place the whole family on the use of tonics, such as cinchonidine or quinine, as a preventive. My experience is that while this will not ward off the disease, it renders the attack less severe.

I have made these cases an opportunity to lecture to you upon the prevailing epidemic, and I trust that the illustrations that I have given will serve to enforce the lessons laid down and leave a clear picture of the affection upon your minds.

ORIGINAL ARTICLES.

ON THE CHOICE OF METHODS IN THE TREATMENT OF UTERINE CANCER.

BY REEVES JACKSON, A.M., M.D.,
PROFESSOR OF GYNECOLOGY IN THE COLLEGE OF PHYSICIANS AND SURGEONS OF CHICAGO, ETC.

IT is now very generally believed that cancer of the uterus is a local disease, and that at some stage of its existence it may be permanently removed. Likewise, it is understood that the curable period in the history of the disease is usually a very early one, and that the most favorable time for operative measures has very frequently passed before the presence of the disease is known or its nature recognized. Equally true with these propositions is a third—namely, that in order to effect a permanent cure the removal of the disease must be complete. If any portion be permitted to remain, recurrence will surely manifest itself.

The modern methods by which the removal of uterine cancer is essayed are chiefly three in number, as follows:

1. Amputation or excision of the diseased structures by knife, scissors, or curette.
2. Actual or chemical cauterization.
3. Extirpation of the entire uterus.

The first and second of these methods may, of course, be variously combined.

I desire to discuss and compare these plans with the view of determining the question: which of them should be preferred for the radical treatment of cancer of the uterus?

If the theory of local origin and limitation upon which all of these methods are based be true, it would seem unimportant, so far as permanency of result is concerned, which method be chosen, the only essential factor being thoroughness of removal; and the operator might feel at liberty to choose the method which sufficiently abundant experience may have shown to be the safer in immediate result. And why not?

For various reasons known to themselves certain operators have given preference apparently to one of the above mentioned methods, and adopted it to the entire or comparative exclusion of the others; and, as a result, we are now in possession of a sufficiently large number of observations, extending over a sufficient length of time to enable us, with a fair degree of accuracy, to estimate properly the relative value of the methods in question in respect to their immediate mortality and their remote results—the latter as bearing especially upon the all-important question of recurrence or reappearance of the disease.

Partial Removal of the Uterus.—In 1882 Dr. W. H. Baker, of Boston, reported the results of high amputation performed in twelve cases of cancer of the uterus, in which it was hoped the entire disease could be removed.[1] No death occurred from the operation. In one case the disease returned after two months, death occurring in seven months. In another the disease returned almost immediately, and death took place in fifteen months. A third died three months after the operation. In a fourth recurrence took place nine months after operation: date of death not stated. In 1888, at the meeting of the American Gynecological Society, Dr. Baker stated that five of these women were living and well at periods of from six to ten years after the operation.

At the same meeting Dr. Thaddeus A. Reamy[2]

[1] American Journal of Obstetrics, 1882, p. 265.
[2] Transactions, 1888, p. 185.

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reported the results which he had obtained by amputation in 55 cases. These were selected from about 300 cases of uterine cancer of all grades, because of the apparent possibility in them of entirely removing the diseased structures. There were two deaths—a mortality of 3 6 per cent.

From Dr. Reamy's report it appears that in 2 of the cases the ultimate result was unknown; in 14 there was recurrence of the disease within one year and subsequent death; in 8 there was recurrence in two years; in 4 there was recurrence at periods varying from two to four years. In 20 there was no recurrence, the periods of immunity being from two to eight years, and 2 of the patients included in the number died from other causes. Of the entire number, 3 others died from other causes, and free from recurrence of cancer, at twelve, thirteen, and fourteen months respectively after operation.

In the *Annals of Gynecology*, January, 1889, Verneuil records his experience with this method of treatment. His cases were 22 in number. There were 2 deaths. In 9 of the cases there was recurrence of cancer in the cervix, while in 12 the cervix remained free from disease, although 1 of the patients was under observation for seven years. Verneuil classifies his cases into two series, the first series embracing the cases operated upon down to the end of 1884, being 17 in number, and the second series including those operated upon since 1884, 5 in number. The average length of life after operation in the first series was twenty-three months, and in the second twenty-nine months.

In 1887 Hofmeier published a table of 96 cases in which partial amputation was done at Berlin. The mortality was 7.4 per cent.; 19 of these patients were living at the end of four years after operation.

Since March, 1882, I have performed partial amputation of the uterus for cancer in 30 cases. Two deaths resulted directly from the operation—a mortality of 6.6 per cent. Of the 28 who recovered 11 are living and were in good health very recently. The periods which have elapsed since the date of the operation in these cases are as follows: In 1 six years and three months; 1 five years and nine months; 3 over four years; 1 over three years; 3 over two and a half years. In addition to the foregoing 2 others are living, but as the operations were made upon them less than two years ago, I have not included them.

Some of the cases are embodied in this report only for their bearing on the question of immediate mortality, the disease having been so far advanced

TABLE SHOWING THE RESULTS IN THIRTY CASES OF HIGH AMPUTATION OF THE UTERUS FOR CANCER.

No	Initials of patient's name.	Residence.	Age.	Date of operation.	Result.	REMARKS.
1	R. M.	Englewood, Ill.	41	March 17, 1882	D.	Death on sixth day.
2	K. M.	Chicago	45	April 17, 1883	R.	Died eight months after, from recurrence of disease.
3	S. M.	Chicago	45	June 16, 1883	R.	Recurrence in four months. Date of death not known.
4	N. A. L.	Ottawa, Ill.	32	August 15, 1883	R.	Had a child two years later. Alive and well in October, 1889, six years and two months after operation.
5	M. S.		54	Jan. 29, 1884	R.	Was "perfectly well" June, 1887, three years and seven months after operation. No later history.
6	T. Y.	Chicago	41	Feb. 6, 1884	R.	No symptoms of recurrence Nov. 1, 1889, five years and nine months.
7	G. M.	Chicago	57	April 12, 1884	R.	Recurrence in eleven months; death in fifteen months.
8	L G.	Chicago	26	April 14, 1884	R.	Recurrence in two months; death in four months.
9	O. S.	Chicago	41	May 25, 1884	D.	Death on fifth day.
10	J. M.	Mattoon, Ill.	38	May 5, 1885	R.	Disease recurred in parametria. Death four and a half months after operation.
11	A. M.	Chicago	48	May 30, 1885	R.	No recurrence. Health good August, 1889, four years and three months after operation.
12	H. H.	Chicago	72	June 17, 1885	R.	Subsequent history unknown.
13	M. W.	Dubuque, Ia.	50	Sept. 23, 1885	R.	No return; health good four years and two months after operation.
14	M. J.	Chicago	40	Nov. 25, 1885	R.	Well and free from recurrence four years after.
15	R. M.	Leavenworth, Kansas	50	Dec. 2, 1885	R.	Well February 11, 1886; no later report.
16	L. H.	Chicago	47	May 8, 1886	R.	Recurrence in five months; death in eight months.
17	A. C.	Chicago	51	June 24, 1886	R.	Death in nine months from recurrence.
18	R. L.	Dubuque, Ia.	64	Oct. 23, 1886	R.	No recurrence three years after.
19	E W.	Aurora, Ill.	50	Feb. 14, 1887	R.	No recurrence Nov. 1889, two years and nine months.
20	R. S.	Chicago	40	Feb. 22, 1887	R.	Well and free from return at end of two years and eight months.
21	J. L.	Chicago	38	March 10, 1887	R.	No return. Health good two years and seven months later.
22	E L. T.	Walkerton, Ind.	42	Dec. 21, 1887	R.	Recurrence in four months; date of death unknown.
23	E. K.	Chicago	40	April 30, 1888	R.	Recurrence and death in six months.
24	I. J.	Chicago	64	May 3, 1888	R.	No recurrence in Sept. 1889, one year and three months.
25	A. E. W.	Oskaloosa, Ia.	57	May 22, 1888	R.	Died three months later.
26	M. M.	Fort Wayne, Ind.	54	July 14, 1888	R.	Recurrence and death nine months later.
27	J. H.	Evanston, Ill.	55	May 17, 1889	R.	Disease not all removed; symptoms continue.
28	E. J.	Chicago	42	July 29, 1889	R.	Symptoms of recurrence at four months.
29	E. P.	Chicago	40	Oct. 29, 1889	R.	Too soon to know remote result.
30	L. M. W.	Waverley, Ia.	65	Nov. 8, 1889	R.	Too soon to know remote result.

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at the time of operation as to render it certain that the affected tissues could not be safely removed, and in which amputation with accompanying or subsequent curetting or cauterization was used only as the most efficient means of palliation. Such cases were Nos. 1, 3, 8, 16, 22, 25, and 26 of the table. Deducting these 7 and the 2 deaths, 9 in all, from the entire number, it leaves 21 from which to compute the ultimate result of the operation. As already stated, 9 of these are alive and well, from two and a half to more than six years after operation.

From the foregoing table it will be observed that the earliest period in which symptoms of recurrence appeared after operation was four weeks, in a single case, and I am quite sure I did not in that instance remove all of the disease. Indeed, in very many cases—I think I may say all—it is impossible to know in advance of, or during, an operation the extent of cancerous involvement, and hence it is equally impossible to know, except through lapse of time, whether an operation will be or has been radical. And this applies to all operative methods. Whenever symptoms of so-called recurrence are manifested within a few months after an operation, it may very generally be accepted that the fact indicates a continuance rather than a recurrence, and that the disease in such cases has only been partially removed. But while this inability to define the anatomical limits of cancer must always affect the prognosis of an operation, it should not deter from an attempt at removal of the disease in any case in which removal may seem feasible; and it should admonish us to be as thorough in operating as may be consistent with the immediate safety of the patient.

Cauterization.—In *The Lancet* of August 2, 1884, there was published an abstract of a report made by Pawlik of 136 cases of cancer of the cervix which had been treated, at Vienna, by means of the galvano-cautery. The report embraced a period of twenty-three years. Of the entire number, 10 died soon after the operation, making a mortality of 6.6 per cent. Of the 126 survivors, 33 were in good health and free from recurrence at periods varying from two to twenty-one years.

At the annual meeting of the American Gynecological Society, held at Boston in September, 1889, Dr. John Byrne, of Brooklyn, read a paper embodying a report of 367 cases of uterine cancer treated by the galvano-cautery, the observations extending over a period of twenty years. The cases being classified according to the portion of the organ affected, the vaginal portion of the cervix was involved in 59, the entire cervix in 81, both cervix and body in 219, the body alone in 8. The mortality of the operation was *less than 1 per cent.* The period of exemption from recurrence varied greatly according to the anatomical seat of the disease, being greatest in those cases in which it was confined to the vaginal portion of the cervix, and least in those in which the corpus was alone involved. In 36 cases of the former which were kept under observation, the average period of freedom from return was eight years and seven months, 30 remaining well over five years. In the 8 cases in which the corpus was alone diseased, the average period of exemption was two years. In more than one-half of the entire number of cases treated there was freedom from symptomatic return for from three to eighteen years.

Hysterectomy.—The removal of the entire uterus for cancer has been performed probably not less than 1200 to 1500 times. At first the organ was removed by laparotomy, but the operation was attended by such a frightful mortality—not less than seventy-two per cent.—that it is no longer done when the vaginal method is feasible, the latter being vastly safer. Dr. Sarah E. Post has compiled some extremely valuable statistics bearing upon this point. In the *American Journal of Obstetrics* for 1887, she published a table comprising 722 cases, and showed that the mortality of the operation was twenty-four per cent.; and, although the statement that the death-rate is steadily diminishing is probably true as applied to a few operators who have had exceptionally large experience, it is hardly true concerning the great mass of operators. Indeed, I have no doubt that if all the cases were published, it would appear that the mortality of the operation is now, and always has been, considerably over thirty per cent. But, accepting the published statistics as correct, the mortality of hysterectomy, as compared with partial amputation, is four or five times greater, and as compared with cauterization, eight or ten times greater. However, the advocates of hysterectomy claim that, as a compensation for this greater death-rate, the disease is much more likely to be wholly removed, and thus freedom from recurrence, and prolongation of life more certainly secured. The apparent reasonableness of this claim cannot be denied, but, unfortunately, observed facts, now in great number, show conclusively its fallacious character. For example, in 1886, Dr. Post presented a table showing the results of 137 cases; 40 of the patients died—mortality 29 per cent. Of the 97 survivors, only 18 were alive at the end of eighteen months to two years. In Pawlik's 136 cases—one less in number—with a mortality of 10, there were 33 alive and well at from two to twenty-one years. Hofmeier, in the report already referred to, of 96 cases of partial amputation, compared the late results with those in 33 cases in which the entire organ was removed. While 19 of those in whom partial am-

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putation had been done were alive at the end of four years, all the others were dead. In Fritsch's 60 cases, with 7 deaths, only 2 were alive after three years. Terrier has recently reported 18 cases. There were 4 immediate deaths; in 3 cases the disease could not be removed, and of the 11 who recovered, only 4 were free from recurrence at the end of two years.

At the last International Medical Congress Martin reported the subsequent histories of 214 women who had survived the operation. Of these, Leopold had 42, Schroeder 46, Fritsch 60, and Martin 66. Of all this number only 5 were alive after four years. Hence, we may say that the successful removal of a cancerous uterus is a very different thing from the successful removal of a uterine cancer.

Having considered the relations which each of the three prominent methods of dealing with cancer of the uterus sustains to the questions of immediate mortality and remote results, it is not difficult to fix their status.

Partial amputation is doubtless a beneficial procedure. With a low rate of mortality, probably not exceeding 5 or 6 per cent., it has in many cases removed the disease permanently, and in others stayed its progress and prolonged life.

In a still greater degree actual cauterization has been shown to be potent for good. The recently published results obtained by Dr. Byrne are wholly without parallel, both in the extremely low death-rate and the greatly prolonged immunity from disease. Dr. Byrne's report is unquestionably by far the most favorable showing that has ever been made concerning any method of treatment for uterine cancer in any considerable number of cases; and as such it distinctly challenges our consideration.

Hysterectomy is a ghastly failure. Not only has it given worse results, both immediate and remote, than other methods of treatment for cancer of the uterus, but I affirm that it is worse than no treatment at all. A hundred women with uterine cancer will live a greater aggregate of years if left alone than if subjected to hysterectomy.

And now, as candid physicians with an honest appreciation of the duties we owe to our patients who place their trust in our integrity as well as in our skill; as men and women willing to be guided by the logic of facts rather than by our predilections or falsely found preferences, what should be our attitude in this matter? If we desire to secure the best interests of a patient suffering with uterine cancer, what method of treatment should we choose for her? Should it be one which with the least risk promises the greatest length of life? or, one which with the greater risk promises the shorter period of immunity from disease and death?

BORIC ACID AND ALCOHOL IN THE TREATMENT OF ACNE.

BY SARAH E. POST, M.D.,
OF NEW YORK.

THE suggestion of this plan of treatment was derived from Dr. Lowenberg's report before the International Congress, at Washington, in regard to its efficacy in the treatment of boils. Dr. Lowenberg based his practice upon the following assumptions:

1. Boils are caused by an affection from without—viz., through the ducts of the cutaneous follicles.

2. The successive outbreak of furuncles on the same individual takes place by auto-contagion—that is, through transportation of the cocci upon the skin.

3. Infection from one person to another is possible, and originates from the same process as No. 2.

It then occurred to me that if in a case of extensive local papillary disturbance of nutrition (carbuncle) infection from without had been distinctly proved, it might be logically inferred in the smaller papillary disturbance (boil); further, that if a middle-sized papillary disturbance of nutrition (boil) were due to infection from without, the same might be just as logically inferred for the still smaller local papillary disturbances called pimples or acne.

Arguments in support of this deduction immediately sprang up. Acne often complicates atrophic rhinitis. The discharge in atrophic rhinitis has often the most offensive character, and particles of this discharge may easily be deposited upon the skin. Again, acne often complicates dyspepsia, in which the breath is also loaded with decaying material. If follicular pharyngitis may be produced directly by the irritation of such air, why not also follicular inflammation of the skin? Acne complicates genital irregularities, and it is not impossible that irritating secretions may be carried from these parts to the face.

Another argument is the fact that the sufferer from acne vulgaris has, without exception, an oily skin. He or she is a person to whom everything in the line of dust sticks. There are people whose skin is always clean. They do not bathe more than others, yet they can go through the dirtiest places without being soiled. Such people do not have acne.

Acne is a disease of adolescence. After the beard grows, men do not have acne, and it is quite clear that the beard protects the follicles from the intrusion of foreign particles. Old people, in whom the glands are less active, do not have acne.

However, the truth or falsity of these arguments will in no degree affect the success of the remedy which is here recommended. I commenced using

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the boric acid solution for acne in 1887, in the Evening Class for Working Women in the Demilt Dispensary, of New York. The class included, at that time, all varieties of disease.

During 1886 the number thus making application for treatment was 379, of which 6, or 1.6 per cent., were cases of acne. During 1887 the whole number of new cases was 525, of which 10, or 1.9 per cent., were cases of acne. During the latter part of this year the boric acid treatment commenced to be used. During 1888 the whole number of new cases was 552, and of this number 28, or 5.1 per cent., were cases of acne. The increased number of acne cases during this year was clearly due to the success of the medication, for these new cases were, as a rule, introduced by those who had already been successfully treated for the disease. At the beginning of the present year the class had outgrown its accommodations and was divided, so that the comparison could be carried no further.

The directions for treatment were as follows: Bathe the face at night in hot water containing a few drops of ammonia; do not use soap. Rinse the face in cold water. Dry the face. Then apply the solution, sopping it on with the corner of the handkerchief or soft, clean rag. In the morning do not wash the face, but apply the solution. Carry the solution with you, and apply it several times a day if the skin becomes moist.

In very bad cases it was my custom to apply a little ether and remove the comedones with the extractor at the time of the visit. Within a week great improvement would be obtained.

Unlike most applications to the skin, the boric acid solution forms an elegant toilet preparation, as it deposits a delicate powder which is scarcely perceptible, and yet serves to remove the "shine" from the face. I think that men, with their covered faces, scarcely realize the necessity of women for some form of face powder, especially the woman whose face is flushed with household work. It has occurred to me that the alcohol might be the active agent in the cure of acne, but without the powder which it carries the alcohol would not be tolerated, as it leaves a glistening surface on the skin.

The solution which I use consists of half an ounce of boric acid in eight ounces of alcohol, to which perfume may be added, if desired.

INDIVIDUALITY THE BASIS OF RATIONAL CLIMATO-THERAPY.[1]

BY G. E. ABBOT, PH.D., M.D.,
OF BRYN MAWR, PA.

IT is of frequent occurrence that known diseases are subjected to imperfectly understood climatic treatment—important conditions and relations being overlooked in superficial advice, or lost in too much generalization. So with the common error of ascribing to climate, disturbances which are incident either to acclimatization, erroneous treatment, or the patient's carelessness. If it were not for these avoidable mistakes of judgment, a systematic differentiation of climates long since might have been made.

The Climato-therapy of to-day deals largely in speculation and experimentation, but a more careful attention to conditions in their relation to results will tend largely to relieve this department of practice of its present uncertainty The demonstrated or accepted facts of physiology, meteorology, and climatology can be known, and utilized by a common-sense application to the needs of the patient. The treatment of classified disease by classified climate is as brilliant as routine bedside practice; each case must stand alone, and the practitioner learns that success depends upon the ready appreciation of a something called individuality, and the comprehension of its subtle influence in modifying the disease and remedy as observed in the case under treatment.

Believing that the principle of individuation is applicable to all the factors involved in a given case, we define the basis of rational Climato-therapy to be, *the certain knowledge of the individuality of physician, patient, and climate.* This knowledge is intuitive and discursive; and the notion of such individuality implies an innate power of discrimination, as well as careful comparative study. Otherwise expressed—the physician, appreciating the personal equation, must realize the importance, and conceive of the reality of the patient and the climate which marks all the others with a difference and constitutes the one under consideration.

The following, purely suggestive in character, may serve to convey approximately an idea of the difficulties attendant upon drawing inferences as to treatment.

Certain rudiments of meteorology and meteorological observations are involved in Climato-therapy. In daily thermometric readings we note that, on mountains the daily maximum comes earlier than on plains or in valleys.—The greatest differences in amplitude are in the strata next the ground.—The air above a convex surface is warmer in winter and at night, it is also cooler in summer and during the day; and the yearly as well as the daily amplitude is less than upon a concave surface.—The daily amplitude on high elevations and in high valleys is often greater than in low-lying plains, depressions, or deep valleys.—Height in itself does not decrease the amplitude.

With small daily changes in absolute, the relative humidity decreases during increasing temperature, and increases during decreasing temperature; *i. e.*,

[1] Read before the American Climatological Association, June, 1889.

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where the daily amplitude is great. The daily change in relative, is more important than that in absolute humidity. In mountain regions, the daily period of the absolute, as well as of the relative humidity is complex; and differs from that of the plains in having a smaller daily amplitude, depending upon the small temperature amplitude and upon moist currents. In elevated valleys, the daily relative humidity amplitude may be greater than in lower valleys, as is the case with the temperature amplitude.

In climatology and climato-therapy it should be remembered that a climate geographically severe, is rendered relatively mild by topographical and local conditions: that the climate of convex surfaces is influenced more by relative elevation and form of surface, than by absolute height: that the rapidity of vapor formation on mountains is increased by lower pressure, and lessened by the general greater relative humidity, as on plains when the relative amount of vapor is smaller and the barometric pressure is greater; and that low barometer, with high relative humidity, often equals high barometer with low relative humidity in its climatic effects.

Single climatic factors have slight purport; averages mean little unless correctly associated. The first practical question to arise is, The temperature of which air shall be measured? One is of climatological, the other of medical import. Then we should know, not so much the absolute as the relative temperature;—not so much the yearly mean, as the mean winter temperature, and the maximum and minimum of the day and of the month; and also the number of hours of the lowest as well as of the highest temperature in every day in each month.

In regard to rain we require, not the mean or total fall, but the mean monthly fall expressed in percentage of the yearly amount; the quantity of rain and the average number of hours of rain per rainy day. With cloudiness it is necessary to know the mean duration of sunshine, expressed in hours per mean day of the month, and its relation to the possible sunshine. The humidity of a locality is unknown, unless the mean in one of the coldest as well as warmest hours of the day is given; and important as is the actual saturation deficiency, still more so is the sensible deficiency in saturation, *i. e.*, the difference between the actual relative humidity of the air at a given temperature, and that necessary to saturate it, were the temperature 98.5° F., is the sensible relative humidity.

The actual velocity of the wind is not so important as its relative, *i. e.*, its sensible velocity; the saturation deficiency and the velocity of the wind determining the evaporation. The effect of these factors on a given absolute temperature is equal, according to Smart, to a calculated degree of calm, dry cold, *i. e.*, the sensible temperature.

The benefit accruing from climatic warmth has its limitations. It may retard the progress of diseases of the lungs, but more probably the improvement depends upon conditions in the case of the patient. An equable temperature, with considerable moisture, exerts untoward local and general influences; while changes in humidity or velocity of winds are more trying than variability in temperature. In general, warm, humid climates are sedatives, dry climates stimulants; yet either continued taxes the nervous system. Since "life points to a change in phases of rest and excitement," variations, within certain limits, probably favor the important functions of life more than relative uniformity.

Improvement due to mountain climate comes not from, but in spite of, the rarefied air, and depends upon its aseptic qualities, strong winds, and an atmosphere in which exercise can be taken at all seasons. Improvement due to ocean climate comes from the antiseptic qualities of the air, the smaller difference between day and night, sun and shade, greater protection from chilling influences, and less demand for muscular activity to compensate heat-loss. In the former, the rarefied air expands the lungs, thereby compensating the pressures and facilitating the blood-flow; in the latter, the high pressure accumulates in the lungs the greatly increased amount of oxygen in the air, while the small quantity of carbonic acid present promotes the carbonic acid exhalation. Sea climate increases appetite, bodily weight, excretion of urea and feces, and decreases uric and phosphoric acid excretions; while in mountain climates there is less demand made upon the organs of assimilation, the appetite despite exercise is moderate, the excretion of urine and feces rather decreased, and there is little or no bodily increase. Both climates give equally good results in the same disease; and each, in patients with marked differences in degree of vitality—why? Individuality.

The more closely Climato-therapy is studied, the more evident it becomes that successful treatment depends less upon the absolute, than upon the relative conditions of climate; less upon the critically differentiated disease than upon the patient—his physiological resistance, recuperative power, and environment; less upon the physical factors than upon the individualities of both patient and climate. An opinion in Climato-therapy presupposes an intimate acquaintance with all the factors entering into any one case—of these, Individuality is essentially preëminent.

CLINICAL MEMORANDA.

ANATOMICAL.

The Remedy for the Annual Scarcity of Dissecting Material.—At this time of the year there is a periodical scarcity of human bodies for the study of practical anatomy and operative surgery in our medical colleges. It seems strange to me that the annual deficit has never been

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met by the simple and perfectly satisfactory device of using the bodies of dogs and cats for such purposes.

It is well known to all of us who have been taught anatomy and surgery, that very nearly fifty per cent. of the dissecting material supplied to students is ruthlessly wasted. Subjects are constantly allowed to dry up or decay by careless and indolent students, while other members of the class are anxiously waiting to have parts assigned to them. The beginner in dissecting very often wastes material from ignorant use of the scalpel; the older student does the same because of his haste to study only nerves, vessels, and viscera.

The principal values of dissection are to teach the first-year student the use of the scalpel and forceps; the appearance of muscle, fascia, artery, and nerve, and the location of the larger viscera. This could be done as well on the body of a dog or cat as on a human cadaver; and at probably one-tenth the expense. Again, the classes in operative surgery are taught, as a first step, to make cutaneous incisions and to insert sutures. Certainly these proceedings are readily learned on the shaved trunk of one of the lower animals. In fact, many of the more important operations could be taught as well, or almost as well, as these. Trephining, resection of bone, excision of testicle, suture of intestine, intestinal anastomosis, excision of the eye, tenotomy, etc., are perfectly demonstrable on the lower animals.

After a course of this kind in certain classes, the students could be put to work on human structures, when it would be found that their trained hands and thoughtful brains would make good use of the opportunity given to study higher anatomy and operative surgery.

This method would be valuable also in giving them some insight into comparative anatomy, of which many of us know so little. It would be a sort of unconscious biological training of no mean import.

It is understood, of course, that I do not mean to practise vivisection in this uncontrolled manner; but to do this work upon dead animals obtained from the dog-pound of the city; if necessary, inferior grades of animals could even be bred for the purpose, as we breed food animals for the slaughter-house. It must, however, be done humanely and scientifically, not brutally.

Students in many schools learn most of their anatomy from books, because of the impossibility of getting human bodies in quantity, and yet an unused wealth of canine anatomical material is always at hand.

JOHN B. ROBERTS, M.D.

HOSPITAL NOTES.

OPERATION FOR DOUBLE OVARIAN TUMOR. ARTHROTOMY OF ELBOW-JOINT. EXCISION OF HIP-JOINT. EXTERNAL URETHROTOMY.

BY CHARLES B. NANCREDE, M.D.,
PROFESSOR OF SURGERY AT THE UNIVERSITY OF MICHIGAN, ANN ARBOR.

OPERATION FOR DOUBLE OVARIAN TUMOR, FOLLOWED BY RECURRENT HEMORRHAGE; RECOVERY.

PROFESSOR NANCREDE called attention to the danger of operating in a general hospital, unless the strictest aseptic precautions were taken. He laid special stress upon the difference between *aseptic* and *antiseptic* surgery, contending that the former was the highest expression of Listerism; that Tait and his school really owed most of their success to the fact that Lister had shown that "something," which adhered chiefly to the patient's person, the surgeon's hands, and his instruments when introduced into the abdominal cavity, caused septic peritonitis, etc. He insisted upon the impropriety of using antiseptics in the abdominal cavity, and told the class that the patient had been prepared for operation by a thorough bath, special attention being paid to cleansing the umbilical depression. The operator also had carefully washed himself. His instruments (solid ones) had all been boiled, as had his ligatures, and the sponges were rendered aseptic. The toilet of the peritoneum would be made with boiled, recently distilled water. No antiseptic would be used, except to wash off the abdominal wall before making the incision, and a pad of antiseptic gauze, wrung dry, placed along the line of incision, as a permanent dressing. The field surrounding that of operation would be protected by towels wrung out of corrosive sublimate solution.

The lecturer then described the course and history of his case, which showed that constant vomiting had existed for nearly seven months, reducing the patient to a state highly unfavorable for operation. The tumor was firmly impacted in the pelvis, causing nearly complete obstruction of the rectum, rendering death only a question of time.

A very long incision was found necessary, and the delivery of the nearly solid tumors was most difficult. Owing to continued oozing, the source of which could not be detected—re-ligation of one pedicle being resorted to—drainage would be instituted, since his rule was, as was Greig Smith's, "When in doubt, drain."[1]

ARTHROTOMY FOR UNREDUCED BACKWARD DISLOCATION OF BOTH BONES OF THE FOREARM.

In this patient a fall, between four and five months ago, had resulted in a dislocation which had not been reduced, it being thought that a fracture of the humerus also existed. Although Professor Nancrede had once reduced a similar displacement at the end of ten weeks, he could not do so in the present case, elbow luxations becoming "ancient" sooner than those of any other joint; indeed, at the end of a month it is often impossible to replace the bones without operation.

Three courses were open in such cases—in the young, arthrotomy; in middle age, excision; in the really old, intentional fracture of the olecranon process under an anæsthetic, and obtaining ankylosis in a good position—a right angle, if a movable joint could not be secured.

Making an incision as if for excision, freeing the ulnar nerve, dividing numerous adhesions, the olecranon was then sawn across, and, after removing a small osseous fragment adherent to and blocking up the trochlear

[1] This proved to be the means of saving the patient's life, for, upon reacting some hours later, severe arterial bleeding occurred: the abdomen was reopened, and, although no distinct bleeding points were detected, the pedicles were re-ligated, it being thought that some vessel had been damaged by the aneurism-needle when perforating the pedicle, or that it contained myomatous tissue, causing it to shrink. The woman recovered, apparently as well as if no second operation had been required.

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surface of the humerus, the bones were with great difficulty reduced. Free drainage was instituted, the olecranon wired to the shaft, and the arm put up on an obtuse-angled splint, the Professor stating that the arm would be gradually brought to a right angle or less, as soon as the contractured state of the triceps could be overcome.

EXCISION OF THE HIP-JOINT.

The lecturer called attention to the evils of prolonged bone suppuration, such as amyloid degeneration of the liver, kidneys, and bloodvessels of the intestines, stating that in his experience, for the diarrhœa resulting from the last-named complication, nitrate of silver in appropriate doses had proved most efficacious, although, of course, not curative.

It might be asked, How did he know that the bones composing the coxo-femoral joint *were* involved? The reasons were that the child had latterly waked up frequently in the night with severe pain in the limb, and found himself forcibly grasping and steadying the thigh with both hands—*i. e.*, he had the distinctive "starting pains" of inflammation of the sub-cartilaginous lamellæ of bone, meaning also more or less erosion of the articular cartilages. Doubtless, in addition, under ether, by proper manipulation, the eroded bony surfaces could be brought into apposition, the granulations torn away, and "grating" elicited.

Under full antiseptic precautions, the joint was excised by Heyfelder's incision, which was usually employed by Professor Nancrede, the femur being sawn so as to remove nearly all the trochanter major, to insure free drainage. The upper part of the acetabulum being carious, it was removed with the burr, the wound drained, and put up in *abduction*, both to lessen deformity and the shortening of the limb.

TRAUMATIC STRICTURE; PERINEAL FISTULA; EXTERNAL URETHROTOMY.

The next patient, aged fifteen years, about three years since, while coasting, fell from the sled and struck his perineum on a board imbedded in the ice, containing some projecting nails, which latter divided the urethra, as shown by the urine passing freely from the wound during the next act of micturition. For a few weeks a little urine was passed by the urethra, but after this time none.

After etherization, first a fine probe, then a director, was passed along the fistula, and a sound down to the occluded portion of the urethra, which was at about the position formerly occupied by the bulb. A median incision exposed the point of the sound, which was made to emerge at the perineal wound, and the strictured tissue was freely dilated and divided by the knife. Next, the posterior portion of the urethra was found, freely opened by dissecting down upon the track of the fistula as indicated by the director, and a soft-rubber catheter, stiffened by a stylet, introduced into the bladder, the instrument being guided along the urethra by a broad-grooved hernia director, which, Professor Nancrede stated, was the best instrument for this purpose. He detailed the symptoms of a ruptured urethra, and called attention to the frequency of the accident from falls upon the perineum and from crushes of the pelvis, and warned the class that after such injuries the condition of the bladder must be at once investigated. He further stated that when decided urethral laceration was demonstrated by the passage of blood with a little urine on the first attempt at micturition, followed by total inability to empty the bladder, and the attempt to catheterize failed, owing to the manifest laceration of the urethra, a median perineal incision should be made, the two extremities of the urethra sought, a catheter introduced, and the wound allowed to heal by granulation. Even with an external wound, as in this case, the urethral ends should have been sought and kept in apposition, when the present operation would have been unnecessary. With no external wound, extensive urinary infiltration with gangrene of the cellular tissue, sapræmia, and death commonly results, unless a free perineal incision is promptly made.

MEDICAL PROGRESS.

Amylene Hydrate in Epilepsy.—DR. WILDERMUTH, of Stuttgart, has had very satisfactory results in the treatment of epilepsy with amylene hydrate, particularly in cases with nocturnal paroxysms. His studies included thirty men and thirty-six women suffering from the disease. The amount given was from one to two drachms daily in two or three doses, administered in wine or cider, or in severe cases in smaller doses administered hypodermically. In some cases a continuous sleepiness was observed, which, however, often disappeared after the patient had become accustomed to the drug without lessening the dose. In many cases the anti-epileptic effects continued for six or eight weeks after the drug was discontinued. The author considers amylene hydrate indicated:

1. In cases with frequent convulsions.
2. In severe bromism to control the paroxysms.
3. In nocturnal epilepsy, where it may be alternated with bromides, in recent cases combined with atropine.—*Therapeutische Monatshefte*, December, 1889.

Dr. Dobell's Treatment of Influenza.—In the *British Medical Journal*, December 21, 1889, DR. DOBELL advises that at the beginning of an attack of influenza the patient should go to bed at once and take hot gruel, hot tea, and beef-tea for diet during the more acute state, resuming ordinary solid meals as soon as practicable. The bowels should be kept well open (but not severely purged) by any aperient known to act most kindly with the patient. The use of the following inhalation should be begun immediately:

℞.—Creasote, Oil of cloves } of each 1 drachm.
Oil of eucalyptus . . . 1 ounce.
Camphorated tinct. of opium 2 ounces.—M.

Shake well, and add one teaspoonful to three pints of boiling water; wait two minutes to let the hottest steam pass off, and then hold the face well over the vessel, and throw a light handkerchief over the head; shut the eyes, and let the forehead and face be thoroughly exposed to the steam, which should be drawn through the nostrils and blown from the mouth. Continue this as long as steam lasts (about fifteen minutes), and repeat every two hours.

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In the interim, gargle occasionally with hot water, and let all the secretions from the nose and throat be ejected. Internally, the following should be administered:

℞.—Spirit of camphor . . . 1 drachm.
Spirit of nitrous ether } of each 1 ounce.
Comp. tinct. of cinch. }

One teaspoonful in water every three hours. If the temperature rises above 101° F., take five grains of antifebrin in two tablespoonfuls of beef-tea, and repeat every hour till the temperature falls to 100°, continuing the inhalations and mixture as before. If pain or oppression of the chest sets in, apply hot poultices. No danger need be apprehended if the above directions are followed in good time. The doses ordered are for persons over twelve years of age, and must, of course, be reduced for those who are younger.

Sozoiodol in the Treatment of Burns.—DR. OSTERMAYER, in the *Deutsche medizinische Wochenschrift*, advocates sozoiodol for the treatment of burns. Like iodoform, it has the property of allaying pain, but in addition it prevents suppuration. It is odorless and perfectly safe. When a burn has been sustained the blisters are opened and the contents removed with sterilized or antiseptic cotton. Immediately a 10 per cent. mixture of sozoiodol in powdered starch or Venetian talc is dusted on profusely, and the whole is then protected by a layer of cotton which is held in place by a roller bandage. After twenty-four hours the beneficial effect of sozoiodol becomes evident. Repair is completed without suppuration in a remarkably short time and painlessly. Of course no danger from poisoning exists, even if the application is over an extensive surface. This is true not only of burns inflicted by direct flame or hot steam, but likewise those due to chemical action. It has been observed that persons suffering from caustic potash burns in the face have made a rapid, painless, and excellent recovery. Scars fail to appear when the wound is treated with sozoiodol.—*Pittsburg Medical Review*, December, 1889.

The Significance of Erythema.—Erythema multiforme is more and more growing in importance as a symptom or precursor of not a few grave diseases. It does not do for us now to regard an attack of it as simply due to indigestion. It has been shown that the occurrence of erythema may mark the beginning of typhoid fever, may occur as one of the symptoms of acute or chronic malarial disease, may be a manifestation of a rheumatic or lithæmic state, or may even, as it were, be an abortive manifestation of any of these diseases. Our attention is again drawn to the fact by Dr. Moncorvo, of Rio de Janeiro, who has recently reported two cases of erythema nodosum occurring in the course of acute malarial disease and yielding promptly to quinine.—*New York Medical Journal*, January 4, 1890.

The Uses of Cocillana.—At a recent meeting of the New York Academy of Medicine, DR. R. W. WILCOX stated that he believed cocillana to be superior to apomorphine as an expectorant, except within the first forty-eight hours of acute bronchitis. It was certainly preferable to ipecacuanha in that it did not so readily cause nausea and metallic taste in the mouth, and, moreover, assisted regular movement of the bowels. It was immeasurably safer in any stage of acute bronchitis than pilocarpine, because it did not depress the heart's action; though it must yield to carbonate of ammonium in chronic senile bronchitis. On the whole, he thought it could fully replace ipecacuanha in every sphere of action, and that in many cases it could be substituted with advantage for apomorphine, carbonate of ammonium, strychnine, and other drugs classed with more or less reason as expectorants.—*Boston Medical and Surgical Journal*, January 2, 1890.

Disinfectant Injection.—The *Gazette de Gynècologie* gives the following formula for a disinfectant injection:

Salicylic acid }	of each	30 grains.
Thymic acid }		
Essence of amber		20 drops.
Essence of verbena		30 "
Alcohol (90°)		4 drachms.
Cologne water		1 ounce.
Distilled water		10 ounces.

A tablespoonful of this solution is to be added to two quarts of water, and used as a utero-vaginal douche two or three times in twenty-four hours whenever the lochia are fetid.

Central Motor Innervation of the Larynx.—In the *British Medical Journal* of December 21, 1889, DR. FELIX SEMON and MR. VICTOR HORSLEY publish the following preliminary note:

In 1886 and 1887 we carried out a large series of experiments (over 100) on different species of animals—monkeys, dogs, cats, and rabbits—with the view of investigating the central motor innervation of the larynx. Circumstances have hitherto prevented us from completing these researches; but we have received so many requests from those interested in the subject that we should publish our results, if only in a preliminary form, that we desire to comply and to add the deductions which we think may be legitimately concluded from our experiments. At the same time we wish to state distinctly that this is only a preliminary communication, and that we shall lay a full account of the experiments on which our conclusions are based, together with a complete theory of the motor innervation of the larynx, before the Royal Society in next May or June. We shall also give a full description of the same before the International Medical Congress at Berlin in August next.

The conclusions which we have arrived at are as follows:

1. There is in each cerebral hemisphere an area of bilateral representation of the adductor movements of the vocal cords, situated in the monkey[1] just posterior to the lower end of the præcentral sulcus at the base of the third frontal convolution, and in the carnivora in the præcrucial and neighboring gyrus. This area has a focus of intensest representation in the anterior half of the foot of the ascending frontal convolution. Stimulation of this point produces complete bilateral adduction of the vocal cords, which lasts as long as the stimulation is continued. Should, however, the latter be unduly prolonged, the "bésoin de respirer" overcomes the influ-

[1] Demonstrated to the Physiological Society, 1887.

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ence of the artificial stimulus and evokes a momentary but powerful abductor movement of the vocal cords. Stimulation of the more peripheral parts of the area evokes less and less perfect adductions as we proceed from the focus outward, and when the extreme margin of the area is excited, only what is known as the "cadaveric position" is assumed by the vocal cords.

The above description applies to the monkey, dog, and rabbit. In the cat we have observed curiously different conditions, for which, at present, we are not prepared to offer any explanation.

2. We have not been able to find an area of representation in the cortex of the abductor movements of the vocal cord.[1]

3. If one of the cortical areas for adduction be so completely excised that stimulation of the neighborhood of the lesion produces no effect upon the larynx, and if the wound be allowed to heal aseptically, no paralysis of the cords is observed. Further, if subsequently the corresponding area in the opposite hemisphere be excited, just as completely bilateral an adduction of the cords is produced as if the opposite area were intact.

From the above facts we infer that

(*a*) Unilateral irritation produces bilateral effect. Thus clinically in any irritative unilateral affection of this area spasm of the glottis—that is, bilateral adduction of the vocal cords—may occur; for example, in laryngismus stridulus. That this view is not purely theoretical is shown by the association in severe cases of the last-named illness, of the glottis spasm with the so-called carpo-pedal contractions. This association is most easily explained on the assumption that we have an overflow of energy from the laryngeal to the neighboring cortical areas for the limbs.

(*b*) Unilateral destruction produces no effect. There is, therefore, no such thing as unilateral paralysis of a vocal cord from lesion of a cerebral hemisphere, as has been asserted. The truth of our statement is made evident by the fact that motor aphasia is not identical with aphonia. Moreover, the observation by one of us (F. S.) of several patients with complete aphasia and right hemiplegia, only a few hours after the apoplectic stroke, has conclusively shown that in such instances the movements of the vocal cords are perfectly preserved.

4. We have observed that on powerful or long-continued excitation of the laryngeal area true epilepsy of the vocal cords supervenes, gradually spreading to the neighboring muscles of the face, neck, head, and upper limbs. From this we conclude that the epileptic cry is not, as has been so long believed, the result of a discharge primarily from the medulla oblongata, but rather represents a stage in the cortical excitement popularly termed an epileptic fit.

5. Whilst we have found so distinctly specialized an area of representation of adduction in the cortex, and no corresponding area of abduction in this region, we have, on the other hand, found that direct excitation of the accessory nucleus in the medulla oblongata evokes abduction of the cords, and never anything else.

From all the foregoing it follows that our results are in complete harmony with the most recent views of the relation of the cortical to the lower centres; for our experiments have shown that the representation of the laryngeal movements in the cortex is essentially that known as purposive or volitional, since it is adduction—that is, phonation; whilst, on the other hand, the bulbar representation of the larynx is as essentially adapted to the so-called automatic processes of organic life—that is, abduction-inspiration.

Finally, this series of experiments, as well as those we have previously published[1] on the peripheral innervation of the larynx, corroborate in the fullest manner the ideas which one of us (F. S.) put forward in his first papers[2] on abductor paralysis, namely, the proclivity of the abductors to fail in organic, and of the adductors in functional, disease.

Rubidium Bromide in the Treatment of Epilepsy.—According to the *Gyógyászat*, DR. ROTTENBILLER has recently studied the effects of rubidium ammonium bromide upon five epileptic patients, and concludes that in doses of one and a half drachms daily it has a decided influence in reducing the frequency of the attack, and in larger doses is about equivalent to potassium bromide, but, like the latter, it has no permanent effect, the paroxysms returning when the medicament is omitted. The costliness of the drug will probably prevent its coming into general use.—*Internat. klin. Rund.*, Dec. 1, 1889.

Treatment of Locomotor Ataxia.—PROFESSOR LEYDEN, of Berlin (*Internationale klinische Rundschau*, December 1, 1889), writes disparagingly of the utility of drugs in the treatment of locomotor ataxia. Nitrate of silver, chloride of gold, ergot, secale cornutum, belladonna, or arsenic may be employed, but in his opinion they are of little use other than the encouragement they afford to the patient. Iodide of potassium is valuable, not as a curative agent, but to mitigate the lancinating pains. Strychnine, he considers unadvisable from the general muscular excitability which it causes. Mercury can be considered as having a specific influence only in cases of syphilitic origin, though in non-syphilitic cases it may be beneficial to a slight degree. Warm baths, he believes, are the most important means which we possess for the treatment of this disease; but, though of decided benefit, they must not be considered as specifically curative. In giving the baths the patient's comfort should govern the temperature, and great care be taken that he does not become chilled. The duration of each bath should be between five and twenty minutes. In most cases this method of treatment should be used only in the summer months. The effects to be expected from the treatment are: increase of the patient's strength, reduction in the number and severity of the lancinating pains, and excitation of the sensory nerves. Leyden also considers it possible that the baths, to a slight extent, check the progress of the sclerotic process.

[1] Vide supra, the cat.

[1] On an Apparently Peripheral and Differential Action of Ether upon the Laryngeal Muscles. By Felix Semon and Victor Horsley. British Medical Journal, August 28, 1886, p. 405.

[2] Clinical Remarks on the Proclivity of the Abductor Fibres of the Recurrent Laryngeal Nerve to become Affected sooner than the Abductor Fibres, or even Exclusively in Cases of undoubted Central or Peripheral Injury or Disease of the Roots or Trunks of the Spinal Accessory, Pneumogastric, or Recurrent Nerves: Archives of Laryngology, vol. ii., Nov. 3, 1881. Ueber die Lähnung der einzelnen Fasergattungen des Nervus Laryngeus Inferior (recurrens): Berliner klinische Wochenschrift, 1883, Nos. 46–49, etc.

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SATURDAY, JANUARY 18, 1890.

THE CO-EDUCATION QUESTION AGAIN.

IN another column we print letters received from two female physicians which are sent as replies to the symposium on this subject published some weeks ago, and though in common justice we cheerfully accord these communications proper space, we cannot let the opportunity pass of denying that "the women who, apart from actual uterine disease, are seriously disturbed at menstruation, are women with a distinct neurotic taint. Menstrual disturbance may properly be classed among the hysterical stigmata, and like the others, implies deficient cerebral control and lower nerve centres."

Every physician, almost every layman, can by a glance tell whether a woman's uterine system is actively engaged in menstruating by the change in the expression and the color of the face and bodily activity, and the vast majority of physicians will testify that most young girls of college age are "laid up" for a day or two with menstrual pain or lassitude every month. Elsewhere the writer of one of these letters has shown that 46 per cent. of all women suffer at menstruation; or, to use her own words, 46 per cent. are cursed with "a hysterical stigmata" and have "deficient cerebral control" and "lower nerve centres," or a "neurotic taint." That is, nearly one-half of the women who would go to college are proved by their staunchest defender to be mentally weak! So far as we can see, this is a most useful endorsement of the opinions expressed in the symposium we have published.

It is claimed that the exercise of mind is utterly different from the exercise of muscle, so far as the expenditure of force is concerned, and that, while muscular activity may not be good for the menstruating female, mental activity does no harm. Physiologically this is absurd, for both forms of activity bring on increased blood-supply to either muscle or brain, and both expend units of force. That force is expended in thought is evidenced by logical deduction, by the necessity of using good food, and by the constituents of the urine showing tissue break-down.

Again, the mere fact that one writer knows of women who bathe constantly during menstruation without harm, has naught to do with the question in hand. Most women have learned for themselves that such a practice is evil in its results. The writer of this editorial knows of a woman of eighty-seven years who daily takes a cold plunge bath and enjoys it, but the majority of women at that age would probably not take more than one.

The question of higher education aside, that of co-education asserts itself, and we confess that on a purely philosophical basis our ideas may be considered too æsthetical. If the race is willing to follow out hard common sense in every detail, then let us have the freedom in the relief of bladder and rectum that the lower classes of Europe are forced to allow, and let us have pregnancy, coition, and similar things talked of in the drawing-room. The young girl who can sit in a class-room with young men and be told of the sphincter vagina muscle and its functions in physiological lectures without flinching should certainly not object to much less broad discussion at a dinner party.

The status of the world should in justice be this, that if women want to do these things, let no one hinder them, but let them know that they are in danger of losing the chief thing that they need, a man's respect, when all their modesty is buried in science. But a few months ago in the confinement ward of a large hospital in this city, sat through the long hours of the night, a younger son of Æsculapius and a still younger daughter who were engaged to be married, and watched the bulging perineum and protruding head or felt the dilated os with student's finger-tip. Romantic scene, no doubt, of youth and science, wed and bred of true philosophy,

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but, nevertheless, somewhat startling to those whose education was received in days when sentiment prevailed.

THE TREATMENT OF STRICTURE OF THE URETHRA BY MEANS OF ELECTROLYSIS.

WHILE waiting to pass judgment upon this question, which for some time past has occupied a prominent place in current medical literature, the profession will closely scrutinize all communications on the subject, either *pro* or *con*, which come before it.

In the *Gazette Médicale* of November 9th, Dr. Boisseau du Rocher contributes a description of a new form of electrode, overcoming certain objections in those of the usual shapes, and enabling him to obtain excellent results, which he promises to give us in full at some future date. Linear electrolysis, he says, yields results that are far from satisfactory, while the process conducted with an olivary electrode and with feeble currents has furnished only insufficient results. The new electrode has a peculiar olive shape, being two cones united by their bases, one of them, that connected with the shaft of the instrument, being much longer than the other. The surface of the double cones is deeply grooved or fluted lengthwise. The reason given for this arrangement is, that owing to the unequal conducting power of the tissues, a greater or less extent of the surface of the ordinary olive-shaped electrode is inactive, the current choosing, of course, the points of least resistance. By the grooving of the surface the points of contact are limited, and an equal action on all parts of the stricture insured. The peculiar shape of the electrode makes it possible to confine the electrical action to the region of stricture, and to spare the healthy part of the urethra.

While these refinements appear to be based upon a clear comprehension of what must be accomplished by the electrolytic treatment of stricture, as an operative procedure, they do not remove from the method that which appears to us the strongest objection to it, namely, that it deals with strictures of all forms and all varieties in practically the same manner. We are among those who are unable to see, as yet, any virtue in the process other than the dilatation accomplished mechanically by the electrode used. We stand, however, ready to be convinced. No one plan of treatment will ever be successful in curing stricture of the urethra. With the location of the contraction, the degree of density, its extent, and the presence or absence of a tendency to recontraction, the surgeon must vary the means employed, and accordingly will make his choice from the methods of dilatation, internal dilating urethrotomy, and external urethrotomy, each, as a rule, meeting, so far as we can see, every requirement of the class to which it is adapted. If electrolysis can accomplish anything more we shall gladly tender to it the first position, if it can prove its claims.

REVIEWS.

ARTIFICIAL ANÆSTHESIA. By LAWRENCE TURNBULL, M.D. Third edition, revised and enlarged. 12mo. Philadelphia: P. Blakiston, Son and Company, 1890.

THE fact that the third edition of this book has appeared very soon after the second was put on the market shows that the labors of the author have been duly appreciated. Dr. Turnbull has taken a great deal of trouble in all the editions of his book to obtain the latest facts in regard to this most important subject. The third edition has been particularly well cared for in this respect, to such an extent indeed that the book is considerably increased in size as well as value. To the physician wishing to post himself as to anæsthetic drugs of all kinds, whether their use is local or systemic, we heartily recommend Dr. Turnbull's work as one embodying everything of importance in regard to the subject of which it treats, as well as an amount of historical and practical information with which every one should be acquainted. Not the least useful portion is the consideration of the relative values and dangers of the various anæsthetics, and the methods of treatment to be employed in cases of untoward symptoms asserting themselves.

CORRESPONDENCE.

NEW YORK.

To the Editor of THE MEDICAL NEWS,

SIR: At the last general meeting of the Academy of Medicine, Dr. Joseph D. Bryant, Surgeon-General of the State and Commissioner of the City Board of Health, read a paper on "The Health Department and the Conference Committee of the Academy of Medicine." This committee was appointed some time ago, when Dr. Jacobi was President of the Academy, and the results of this coöperation with the Health Department, as shown by Dr. Bryant's report, have been very satisfactory, particularly as regards the matter of contagious diseases. The President of the Board of Health and a considerable number of prominent physicians were present and took part in the discussion.

The Mayor and a party of other officials recently made a visit of inspection to the auxiliary insane asylum of the Department of Charities and Correction, situated near Central Islip, Long Island, which was provided for

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by act of the Legislature in 1885, as a means of relief for the overcrowded institutions on Ward's Island. The property purchased consists of about 960 acres of almost level, sandy soil, with here and there a thin top layer of vegetable mould; building operations were begun eighteen months ago. In April last the first detachment of inmates was sent down from Ward's Island, and already the results of the experiments of this country colony have been extremely gratifying. There is now a collection of frame buildings, most of which are but one story in height, having steep shingle roofs and sheltered porches, with enclosed galleries connecting the different groups. There are three groups of ward buildings, or pavilions, each consisting of three dormitories and a dining-hall, and an administration building of two stories, in which the physician in charge resides with his family. There are also a bakery and cookhouse, storehouse, tailor's shop, laundry, water-tower, stable, ice-houses and boiler-house, and blacksmith and carpenter shops are in course of construction. In all there are twenty-one buildings of various sizes, and the total cost of these, with the land, has been about $244,000. There are at the present time 309 male patients in the institution, which is about sixty short of its comfortable capacity, and for the care of these there is a force of thirty-three physicians and attendants. A considerable tract of land is under cultivation by the inmates, and nearly all the cooking, tailoring, mending, washing, cleaning, and other labor about the institution is also done by them. The present system is capable of almost indefinite expansion, the site being sufficient to accommodate comfortably 6,000 patients, and efforts will be made by the department to secure an appropriation of $250,000 for more buildings and improvements at the coming session of the Legislature.

A recent event of interest has been the organization in this city of the "Association of Life Insurance Medical Directors of America," the object of which is announced to be "the promotion of medical science as applied to life insurance by the personal intercourse of the members, presentation of papers, discussions, and such other methods as may be found desirable, and also the encouragement of social and personal relations between its members, and the advancement of the general interests of life insurance." The officers elected were the following: President, Dr. J. M. Keating, of the Pennsylvania Mutual Company; vice-presidents, Drs. G. W. Russell, of the Ætna, and Louis McKnight, of the Northwestern Mutual; secretary, Dr. Frank Wells, of the John Hancock; treasurer, Dr. J. W. Brannan, of the Washington; executive committee, Drs. J. M. Keating, Frank Wells, J. W. Brannan, Henry Tuck, G. S. Winston, E. W. Lambert, and Edgar Holden. The next meeting will be held in May, 1890, and after that, May is to be the regular month for the annual meetings.

At the annual meeting of the Council of the University of the City of New York, it was announced that there are this season 650 students in the Medical Department, and that the original work in physiology, biology, and pathology in the Loomis Laboratory up to the present time, including the report of experiments made with the Brown-Séquard elixir, will soon be published in the form of Loomis Laboratory Proceedings.

Early in December the new Babies' Hospital, which, it is claimed, is the only institution in the city exclusively devoted to the care of infants, was inaugurated with appropriate ceremonies. A portion of its work will be the training of girls for children's nurses, and in connection with it there is also to be a post-graduate course for instructing trained nurses in the special nursing of sick children.

Another melancholy illustration of the extreme caution that is necessary in handling sulphuric ether in rooms where there is artificial light is furnished by the recent death by burning of a female nurse in the private hospital of the homœopathic surgeon, Dr. William Todd Helmuth. She was pouring ether from one bottle into another, when the vapor became ignited from the gas or a lamp and one of the bottles exploded, with the result of setting fire to her clothing and burning her so severely before assistance arrived that she died the next day. The victim was a trained nurse, twenty-six years of age, and had been in the hospital for six years.

One of the daily papers publishes the following interesting item: The residents of Williamsburg are discussing a harrowing report concerning the material of which bologna sausage is manufactured in Newtown. Henry Meyer, of that place, has been found by Health Officer Wickam using horse meat in the manufacture of his sausages. The Newtown Board of Health met, and decided that there was no law to cover the case. But the people of Williamsburg are dissatisfied with such a decision, and the Newtown sausage is no more prized as a family succulent. Over the bridge, the news has travelled quickly. At this very time, when the fascinating Frankfurter is showing up on every Bowery corner, the dread of equine sinew is threatening trade. For those New Yorkers who are distrustful of bolognas and Frankfurters, however, Dr. Edson and Chemist Martin, of the Health Board, have a reassuring word. "There are no horse-meat sausages made in New York," they say. It is a matter of conjecture whether they are imported.

THE HIGHER EDUCATION OF WOMEN.

To the Editor of THE MEDICAL NEWS,

SIR: I have noticed that one of the distinguished contributors to your interesting symposium on "The Higher Education for Women" has quoted my statistics in regard to menstrual disabilities, but it is rather singular that neither he nor anyone else observed that these statistics were chiefly obtained from women who had received only a limited education. They are not, therefore, really applicable to the question at issue further than to show, conclusively, that privation of intellectual training is entirely inadequate to secure to women the blessings of health. This, indeed, everyone knew before, since the great mass of illustrations on which physicians have based their theories upon this matter are necessarily drawn from among (relatively) uneducated women, since the number of women who have received anything like a complete education is as yet very small.

Will you allow me to note two points, which seem to me to have been overlooked in this discussion, exhaustive as it apparently seemed to be?

1st. It seems to me a singular exaggeration to assume

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that the course of study at any existing American college, academic or professional, involves a serious wear and tear on the nervous system, or any very strenuous brain action. The work consists not in independent and original intellectual effort, but simply in the acquisition, step by step, of a definite amount of information. For anyone who has taken all the preceding steps, such acquisition of new knowledge can cost no serious exertion. It is as easy to go from the nineteenth to the twentieth step, as from the fourth to the fifth.

It would not be difficult to show that there would be more risk to health in sitting for six hours every day doing nothing, than in spending six hours out of the twenty-four (not necessarily at one session) in reading Latin and Greek books. It is evident that when these languages are understood, it is not more difficult to read them than English or French; and until they are understood the books are not read, but a much more elementary mental process than reading is carried on.

It seems to me that college-bred men who, since leaving college, have engaged in the intense activities of original scientific researches, or been immersed in the intense anxieties of responsible medical practice, should be the first to recognize the radical differences which exist between such brain-work and the moderate intellectual exertion involved in simply acquiring the current standard of knowledge in the classics, or in mathematics, or in an ordinary medical curriculum. But this moderate mental exertion—appropriate, it is true, to immature youths—is habitually referred to, in these discussions, as if it implied the labors of Newton and Bacon combined. A fixed standard of measure is essential to accurate discussion, but it is habitually neglected.

2d. Again, in these discussions, mental activity is constantly described as a pure expenditure of force, and the influence of the active brain in regulating and harmonizing the nutritive processes of the entire organism, is insufficiently recognized. In the symposium, this influence seems at first sight to have been admitted by several writers. But the assumption is nevertheless maintained by all, that brain activity is a pure expenditure, that the menstrual process is another pure expenditure; hence, if the two go on together, the organism must become bankrupt. If the above and widely accepted proposition were true, no woman would be capable, I will not say of university education, but of any life more arduous than that of Eastern harems. The obvious fact that the great mass of women, as of men, do and always have led arduous lives, should be accepted as a *reductio ad absurdum* of the doctrine, because, as I have shown in my *Essay on Menstruation*, the essential menstrual process covers not one week, but more than three out of every month—more than three-quarters of the adult woman's life until the menopause. But this process, so far from being an exhausting one, seems to constitute the fundamental nutritive stimulus to the female organization. Loss of such stimulus is severely felt, as shown in cases of functional amenorrhœa, and often in patients from whom the ovaries have been removed. Though relieved, possibly, of the intolerable suffering of dysmenorrhœa, the nervous system of such patients seems to remain, at least for a long time, out of equilibrium—in a state of atony, if I may so express it. If the menstrual process were a pure expenditure, pure waste of force, the latter individuals should rather be expected to reach exceptional degrees of vigor, which is certainly never the case, even when restoration to health is most complete.

But I have shown, and others have since repeated my experiments with the same results, that the supplementary wane of nutrition contingent upon the menstrual process, suffices and more than suffices to cover its expenditures. The greater reproduction cycle of pregnancy involves a still more painful wane of supplementary nutrition, whose details are easily recognizable. The nutriment for both these wanes is saved from the muscular nutrition of the female organization, which is universally, and constantly, and conspicuously inferior to that of the other sex. The women who, apart from actual uterine disease, are seriously disturbed at menstruation, are women with a distinct neurotic taint. Menstrual disturbance may properly be classed among the hysterical stigmata, and, like the others, implies deficient cerebral control over lower nerve centres.

It is well understood that cortical activity increases cerebral control, as distinctly as, in the famous experiment, the crystal of chloride of sodium laid on the optic lobes of the frog inhibited the reflexes of the spinal cord. It might, therefore, be anticipated that increased cortical activity, the correlative of increased mental exertion, would tend to remedy the disorders resulting from an ill-regulated action of lower nerve centres, among those controlling the pelvic circulation and innervation; possibly, also, the mysterious nutritive processes lying at the very basis of the menstrual functions. As a matter of fact, this is seen to be the case over and over again, whenever the observation is sought for; as positively as dysmenorrhœa, and even organic uterine disease, is liable to originate in emotional excitement—so positively does purely intellectual work—unalloyed by care or anxiety correct such disturbance, so that dysmenorrhœa tends to disappear under its influence.

If the neurotic taint be profound, the foregoing proposition may not prove true. Yet even in cases of serious hysteria—where the (so-called) menstrual week was liable to be attended with more or less irritability of temper—and to necessitate avoidance of physical exertion, I have not unfrequently found that college-bred women were in nowise incapacitated for their habitual mental exertion, whatever that might be, and it was frequently of a literary character.

I claim that the assumption of special mental incapacity during the menstrual period is entirely false as regards the great majority of women; certainly of women who would be engaged in intellectual pursuits; certainly of girls at the age for going to college—in which it may still be presumed that uterine disease is not yet developed. It has never yet been shown that the habit of continuing the college studies during the menstrual week is really the cause of ill health even in those who break down. For this condition has never yet been eliminated from the others with which it is always associated, and any one of which would be sufficient to cause ill health, and does so in girls who never dream of college at all.

When it is said that an observant physician can always distinguish a difference in the nervous condition of a woman at the menstrual period, it is not stated whether this observation is confined to the nervous women who populate the hospitals, or whether it is seriously claimed for observations of the feminine world at large. In the

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first case, it is, of course, true; in the second it certainly is not. But even where such an observation would hold good, it is of an entirely different nervous sphere from the intellectual. Undoubtedly there are women who become perceptibly more irritable, more unreasonable, more emotional at the menstrual period; whose senses are more acute, so that they are more easily annoyed by noises or smells; who are more fanciful, more easily depressed, who may even be habitually and causelessly depressed at such times. But all these changes—which are very far from being universal even among rather delicate women, and are absent altogether in the robust—do not necessarily affect the power of attention, or of application, or of appreciation of a subject presented to the intellect. Whether or not the power of original work is affected would be an interesting subject of inquiry, but assuredly no data as yet exist upon which it might be made. It is physical exertion that needs to be diminished, when that is practicable, as it only is in certain favored classes of women; it is emotional excitement, the occurrence of which can never be foreseen, that should be averted from the period of the menstrual flux.

Perhaps it is because of the recognized impracticability of these precautions in the immense majority of cases that women's advisers turn to mental occupations as the one thing which may be denounced. Yet it is in reality the principal thing which for healthy women it is desirable to leave unchanged.

Whatever other arguments may be urged against co-education, it seems to me that one at least is quite unsupported by evidence, namely, that which assumes a periodical incapacity of women to perform mental work, which incapacity is supposed to become greater and more injurious the more the woman herself is unconscious of it; which, in fact, is most conspicuous when absent, and most fatal when the woman student is able to disregard it entirely—as to maintain our record of attendance unbroken, and to keep a high standing in a class of young men!

It may be added that the further assumption that collegiate work proper ever involves a strain upon those who have been suitably prepared for it is equally unproven.

MARY PUTNAM JACOBI.

CO-EDUCATION AND THE HIGHER EDUCATION OF WOMEN.

To the Editor of THE MEDICAL NEWS,

SIR: The symposium on "Co-education and the Higher Education of Women" in your issue of December 14, 1889, might have been more complete if it had contained the opinions of medical women. In deliberations concerning the health of women, women physicians, because they *are* women, have opportunities for forming correct opinions that men cannot have. The latter know chiefly the sick and invalid class, and arrive at conclusions in accordance with this knowledge, whereas women physicians know intimately their well and their sick sisters.

I know that space is necessarily limited in a periodical like yours, but I think there are a few points not sufficiently brought out, and some conclusions reached that seem to me mistaken. Of these I would like as briefly as possible to speak.

One author, after citing the showing of Dr. Mary Putnam Jacobi that "46 per cent. of women suffer more or less at menstruation," says: "It is evident that in a system of co-education women are handicapped by the manifest necessity of abstaining from severe or sustained mental work for several days in every month."

I do not see that the conclusion is a logical necessity. Let the remaining 50 per cent. and over who do not suffer seek the higher education if they wish. The eminent doctor seems to think that at least the majority are affected in this way, but he does not show that such is the case. On the contrary, plenty of women can be found everywhere, who have borne children, too, who tell us that they have never experienced ill feelings during their menstrual periods.

Of the 46 per cent. who say they suffer, it is not shown that their disabilities are sufficient to make it necessary for them to abstain even one day from their daily avocations, whether of "severe" and "sustained mental work," or other arduous work.

Another physician says: "Let us compare the average male student with the average female student. Let us consider that she has for several days in every lunar month to forego her daily bath, to curtail her customary exercise," etc. Why does she need "to forego her daily bath?" Is it for the same reason for which, not many years ago, a lying-in woman was required to remain in her bed nine days without a drop of water being applied to her person? One is often met even yet by remnants of superstitions as regards the injurious effects of water used either externally or internally, and what appears like superstition should not proceed from the pen of a great physician and author. I can refer any who may be interested to several women who have not only personally used baths at all times of the month, but have prescribed the same to patients for years, with no ill effects in either case.

As to "curtailing her daily exercises," if he means by that her daily occupation, he is wrong, for the majority of women belong to the industrial classes, who have no idle days. If he means the cultivation of her muscle, he may be in a measure right, but it is not shown that intellectual ability and muscular development are often associated in the same person. It sounds thoughtful and gallant in men to appreciate woman's disabilities and burdens, and to oppose anything arduous for her, but it remains to be seen that they correctly understand the best way of making life of more value to her. It is certain that the effort to relieve women of onerous duties has always been a failure for the great mass. "Prolonged confinement" and "prolonged brain-work" in various directions are certainly very common.

When a woman does not shrink from an arduous life, and looks forward to it from necessity or choice, and would better herself and her opportunities by higher education, she is met at once by disagreement from one of the best informed and most philanthropic class of citizens—the doctors. They tell her it is impossible. She cannot be equal to the labors and honors of brain-work. If she tries she will become a victim of neurasthenia, and in case she is not already a mother, she will probably be deprived of happy maternity.

They do not stop there, but say it would be immodest for her to put herself where men could observe her at her daily work in her laboratory, recitation or lecture-room,

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and see and possibly understand the disabilities she would be sure to have.

In the first place, women are not as frail as physicians are sometimes led to think; and in the second, strength comes by the demand made for it. As with the young man, when he acquires manhood's motives for constant labor and puts out his strength he surpasses in deeds those of his boyhood, so with the woman, an aim, a purpose, as, for instance, the study of medicine, checks any emotional and hysterical tendencies, and from a nervous invalid she often becomes strong and vigorous. A weakly wife is left a widow, and, added to her deep grief, she not seldom attends to her family and to her husband's business as well, so that both prosper, and she knows nothing of her previous physical infirmities.

As to competition working more injuriously to women in co-educational institutions than in those for women alone, observation seems to indicate that it is the system of education that is at fault, and that competition is as fierce where there are women alone as it is possible to be anywhere.

It would be interesting if we had statistics comparing the health of women at co-educational institutions with that of those at woman's colleges. The menstrual difficulties, so often observed at girls' boarding schools, according to my observation and experience at Cornell are almost unheard-of. The average non-attendance from class exercises of the young women from the cause of ill health, compared with that of the young men students from the same cause, showed a proportion in favor of the young women. Those I have known from co-educational institutions have given similar reports in this matter.

Probably in women's colleges it is not the fact that the education there is either "prolonged" or "severe" that causes the ill health noticed. In the institutions of best standing there is no more suffering reported than in those of more superficial instruction. My opinion is that in all of these, one factor causing deterioration of health is the unnatural social circumstances in which a young woman finds herself placed. Her liberties are largely restricted, and she has not the ordinary association of both sexes to which she has always been accustomed in her home. This I consider a potent factor in the frequent decline of woman's good health in women's colleges.

At Cornell I have never heard that there was any occasion for a "masculine smile," which one of the authors so feelingly mentions as an objection.

I cannot imagine a "masculine smile" being called forth there by the absence of a young woman from her work several days each month. Such disabilities would be felt to be out of place at an institution where hard work was expected every day, and such a one would before long find herself weeded out at examinations and allowed to go home where the men about her might smile or fret at the ill health of their families.

As to the higher education interfering with child-bearing, it would be interesting to follow a line of investigation to ascertain whether in men higher education was not prejudicial to the production of large families. I think, however, the popular belief is the correct one, that the shanties of the ignorant and poor show the greatest number of children. If, as Napoleon told Madame de Stael, the greatest woman is she who bears the most children, then both education and all the advantages and refinements of civilization should alike be avoided.

Woman's dress has been alluded to, very justly, as a hindrance to her complete development in any direction. I think, however, the advance made in this line has been in keeping with that made in her higher education. In proof of this I will cite the present demand for "common sense" shoes and under-waists, for warm flannel underclothing and suspended garments, and looser dressing, which means larger waists. The gymnastic dress is worn for mountain-climbing and other out-of-door exercises. Women no longer think it praiseworthy to be dressed dolls in the parlor and to subsist on but little of the daintiest fare. On the contrary, they take pride in their athletic feats; the mountains they have climbed, their success at tennis, their skill in managing oars, in swimming, in being good horsewomen, etc. In many places the women as well as the men are making constant use of the bicycle.

I may as well mention one point that has not been touched where women have the advantage of men in co-educational schools. The young man attending the best of our colleges are picked men from the localities from which they come. The average college morality in this country is high, and pains are taken by all college authorities to keep it so, but women know no such voluntary expenditure of force and vitality as is caused by the habits of wine-drinking, tobacco-using, and social vice. These, to say the least, are never uncommon in any large gathering of men, though it is said to be much less so in co-educational institutions than in others.

MINERVA PALMER, M.D.

ROCHESTER, N. Y.

NOTES ON INFLUENZA.

To the Editor of THE MEDICAL NEWS,

SIR: The following notes from this locality, in connection with the epidemic of catarrhal fever now prevalent, may be of interest.

During the past half year the humidity, temperature and rainfall have been above the averages. There has been an unusual amount of urticaria in both sexes and all ages, and various forms of erythema, especially in children. In the autumn muscular rheumatism and bronchitis prevailed, and later, pharyngitis and tonsillitis were frequent.

In many cases of children, influenza has simulated scarlet fever. Ushered in by vomiting, slight sore throat, and anorexia, and followed within forty-eight hours by a scarlet eruption, commencing upon the chest and spreading over the body; tongue coated, papillæ enlarged; the conjunctivæ often a bright scarlet. The fever is not high; the pulse but slightly accelerated; the throat symptoms are slight; bowels normal. In the adult, the raging head-ache, back-ache, vertigo and inflammation of throat and bronchial tubes are the chief symptoms.

Sponging, followed by inunctions to the skin, and aconite internally act satisfactorily with children. Phenacetin, antipyrin, or antifebrin quickly relieves the neuralgic pains. Salicylate of sodium or quinine controlled the muscular symptoms. The coryza is checked by atropine or tincture of belladonna. The dry, "stuffy"

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feeling of the nasal passages yields to potassium iodide, and the bronchitis to a combination of ammonium bromide and potassium iodide. The above treatment has given the best results in the cases under observation. The duration is short and termination favorable, and symptomatic treatment seems to be all that is required.

M. S. SIMPSON.

PLAINFIELD, NEW JERSEY.

NEWS ITEMS.

Smallpox Imported in Egyptian Rags.—At the Seymour Paper Mill, Windsor Locks, Connecticut, smallpox has been reported. Two out of the eighty females employed in the rag-sorting room are down with the disease. Egyptian rags are said to be the commodity handled by the persons who took the disease, and yet the mill proprietors assert that a thorough disinfection was reported before the goods were allowed to land.

Atropine Dispensed for Antipyrin.—At the town of Gouverneur, N. Y., a life was recently lost in consequence of dispensing atropine for antipyrin. A citizen of prominence and worth at that place prescribed for himself a five-grain dose of the latter, for the relief of neuralgia. The person in charge of the drug-store sold him five grains of atropine, which was taken soon afterward, and resulted fatally about two hours later.

The Earl Crematory at Troy, New York.—The twelfth crematory erected in this country has just been finished at the Oakwood Cemetery, Troy, New York. Two bodies have already been incinerated there. This is, without doubt, the most elaborate structure of its kind in the world, comprising, as it does, a chapel and lofty tower, besides the furnaces. The chapel stands in memory of the late Mr. Gardner Earl, having been presented to the cemetery by members of his family. The structure, as a whole, will bear the name of the Earl Memorial Building, but will be free to the use of those who have the privileges of the cemetery.

The New York Hospital Sunday Fund.—The collections under the Saturday and Sunday Hospital Fund, New York City, last year have, as far as reported, amounted to $46,000. The Executive Committee has just issued a card calling upon the donors to the fund to renew their contributions, on account of the extraordinary demands made upon the hospitals by the epidemic of influenza. The various charitable institutious are crowded and strained to the utmost, both for means and room, and the pressure must continue for some time to come, involving a large additional and unexpected expense. The prevailing epidemic will about double the expenditures of some of the hospitals during the winter quarter.

The Prevention of Leprosy.—The Surgeon-General has issued a circular to medical officers of the Marine-Hospital Service and to collectors of ports calling attention to the prevalence of leprosy in several foreign countries, and promulgating regulations for the protection of the people of the United States from the disease.

Surgeon T. H. Parke Honored.—Surgeon Parke, of the British Army, the companion of Stanley in his three years' walk across Africa, has been made an honorary Fellow of the Royal College of Surgeons of Ireland. A movement is on foot among the medical men of London to give him a testimonial dinner when he reaches that city. A recent cable dispatch reports that the health of Surgeon Parke has improved since his arrival at the East Coast, and that he will be on his way homeward within a month.

Execution by Electricity.—A committee, composed in part of physicians—Drs. C. F. Macdonald and A. D. Rockwell—and in part of electrical experts, has been testing the dynamos that are to be used in New York State for the execution of criminals. These machines have been found to deliver a voltage considerably in excess of what was demanded or expected from them. When run at ordinary speed a pressure of 1600 volts was obtained. With 300 revolutions per second the pressure would probably exceed 2000 volts, a lethal energy which will explain many of the recent tragical accidents reported from various parts of the country as due to the electrical lighting currents.

The Value of a City's Refuse.—The value of the refuse of a great city is seen in the fact that the New York Street Commissioner has given a contract to trim the garbage scows to an Italian, who agrees to pay the city $1552 per week for the privilege, or $80,704 yearly. The privilege was sold last year for $1101 per week. The contractor employs men to pick over the refuse while trimming the scows, and from what they hand over to him he is able to secure a large profit.

Ambulances for Chicago.—Through the instrumentality of a woman, an ambulance was presented to the mayor and citizens of Chicago during Christmas week. This ambulance was subscribed for by private individuals, and will be used experimentally at first in the expectation that others will be added, and, by degrees, be substituted for the police patrol wagons. If the plan succeeds, there will eventually be a complete ambulance system for the whole city, under the control of the surgical staff of the police department.

Indian Medicines.—Every one is more or less familiar with the expression "a good Indian medicine," as referring to some indigenous herb. In a recent lecture by Major J. W. Powell, Superintendent of the United States Geological Survey, it was pointed out that this is an incorrect use of words. To the Indian mind there is no medicine except sorcery. The idea of remedial power in any herb or other substance is foreign to the mind of the red man, who is very tenacious of his belief in witchcraft. The "medicine-man" is a sorcerer and priest, rather than an adept in the healing art; he, therefore, does not recognize "a good medicine" in the sense of a useful medicament.

The President of the American Society of Naturalists.—Dr. H. Newell Martin, of the Johns Hopkins University, has been elected President of the American Society of Naturalists.

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Explosion of a Bottle of Carbonated Water.—A nurse at the German Hospital, New York City, was recently injured by the explosion of a bottle of carbonated water. One eye was destroyed, and the other so seriously damaged that she may become totally blind.

Obituary.—Dr. William Oswell Livingstone died at St. Albans, England, December 30th, the last-surviving son of the great African explorer, Dr. David Livingstone. He was born in Africa thirty-nine years ago, and was educated at the University of Glasgow. He formerly practised medicine at Port of Spain, Trinidad, W. I. For the past nine years, on account of feeble health, he had not been in practice. A small pension was granted him by the British government.

Death of Dr. Thomas T. Minor.—Dr. Thomas T. Minor, of Seattle, Washington Territory, formerly Mayor of that city, and member of the Constitutional Convention, is supposed to have been drowned. He was one of a hunting party which was expected to return to Seattle about December 5th. An empty and adrift canoe has been found belonging to the party, and no other tidings.

Newly Elected Officers of the New York Pathological Society.—At an election held on January 8th the following officers were elected:

President.—J. West Roosevelt, M.D.
Vice-President.—H. P. Loomis, M.D.
Treasurer.—J. H. Hinton, M.D.
Secretary.—Thomas L. Stedman, M.D.
Editor.—George C. Freeborn, M.D.
Committee on Publication.—T. Mitchell Prudden, M.D., and Walter B. James, M.D.
Committee on Admission and Ethics.—W. P. Northrup, M.D.; R. H. Sayre, M.D.; H. P. Loomis, M.D.; Ira Van Giesen, M.D., and John S. Ely, M.D.

Typhoid Fever in Berks County.—Typhoid fever is said to be endemic in Berks County, Pa.

Guy's Hospital Gymnasium.—Dr. F. W. Pavy has introduced a rather novel proposition, to the medical circles of London, in an offer to present to the College at Guy's Hospital a gymnasium for medical students.

The Ophthalmic Review.—The *Ophthalmic Review* begins its new volume with an American editor, Dr. Edward Jackson, of Philadelphia, who succeeds Dr. James Anderson, of London. It will hereafter contain original articles from American as well as English ophthalmic surgeons, with notices and full reviews of ophthalmological papers published in this country and abroad.

The Hyderabad Chloroform Commission.—A telegram to the *Lancet*, from Dr. Lauder Brunton, states that after experiments on four hundred and ninety animals he has reached the conclusion that the danger of chloroform is asphyxia, not heart failure—a direct reversal of Dr. Brunton's former views.

A Coroner's Fee Lost.—Dr. A. T. Weston, Deputy Coroner of New York, was called on December 20th to make the preliminary medical inspection of a child reported for inquest by a midwife. Twins had been born to a German woman on the 18th, one of them dying soon after birth, the second lingered nearly two days: such was the report of the woman. When Dr. Weston saw the child he suspected a spark of life remained within it, and in the course of half an hour or more he had the satisfaction of resuscitating the child. Some years ago, it is stated, a supposed dead baby reached the Morgue before the fact of remaining vitality was discovered.

Antipyrin in Sea-sickness.—Surgeon George B. Parsons, of the "Ocean" steamship line, has had a limited experience with antipyrin in *mal de mer*, which leads him to prefer it to the bromides, chloral, nitrite of amyl, and cocaine. In the *Provincial Medical Jonrnal* for October he summarizes his results in twenty cases: twelve escaped entirely; the other eight suffered less than on previous voyages. He gives five grains on embarking and repeats the dose in four hours. As a rule, three doses at most are required. In very severe cases, he would give the antipyrin hypodermically, and apply counter-irritants to the epigastrium.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING JANUARY 11, 1890.

WHITING, ROBERT, *Passed Assistant Surgeon.*—Detached from the "Minnesota," and ordered to the "Dale."

PICKRELL, GEORGE MCC., *Assistant Surgeon.*—Detached from the "Dale," and ordered to the "Minnesota."

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 7 TO JANUARY 13, 1890.

By direction of the President, LEONARD Y. LORING, *Major and Surgeon*, will report in person to Colonel Benjamin H. Grierson, Tenth Cavalry, President of the Army Retiring Board at Los Angeles, California.—Par. 3, *S. O. 6, A. G. O.*, January 8, 1890.

By direction of the Secretary of War, leave of absence for six months, on surgeon's certificate of disability, with permission to go beyond sea, is granted LOUIS M. MAUS, *Captain and Assistant Surgeon.*—Par. 13, *S. O. 4, A. G. O.*, January 6, 1890.

WALKER, FREEMAN V., *First Lieutenant and Assistant Surgeon* (Jackson Barracks, Louisiana).—Is granted leave of absence for one month, on surgeon's certificate of disability.—Par. 7, *S. O. 5, Division of the Atlantic*, January 7, 1890.

By direction of the Secretary of War, R. B. BENHAM, *Captain and Assistant Surgeon*, is relieved from duty in the Department of the Platte, to take effect upon the abandonment of Fort Laramie, Wyoming Territory, and will then report to the commanding officer at Madison Barracks, New York, for duty at that station.—Par. 8, *S. O. 6, A. G. O.*, January 8, 1890.

BLACK, CHARLES S., *Captain and Assistant Surgeon.*—The leave of absence for seven days, granted by the commanding officer Fort Du Chesne, Utah Territory, is hereby extended twenty-three days, with permission to apply to the Adjutant-General of the Army for an extension of three months.—Par. 3, *S. O. 1, Department of the Platte*, January 1, 1890.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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THE MEDICAL NEWS.

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ORIGINAL LECTURES.

RADICAL OPERATION FOR HERNIA.

Abstract of a Clinical Lecture
Delivered at the Harlem Hospital, New York.

BY THOMAS H. MANLEY, M.D.,
OF NEW YORK.

THE first case presented for operation was one of strangulated inguinal hernia. The patient, a strong man of twenty-four years, gave a history of having noticed a swelling, in the left side since he was six or seven years old. He had worn a truss almost continuously until two years ago, when he found that after having left it off the hernia did not reappear.

The features in the clinical history to which Dr. Manley particularly directed attention were, first, the origin of the trouble. The patient thought that the hernia had not appeared before he was seven years old; but Dr. Manley was convinced that while the protrusion may not have been large enough to attract notice until that age, the lesion was congenital, as are the vast majority of all herniæ.

Secondly, the patient, supposing himself cured, had discarded the truss for two years; and it was only after a severe strain that he found his rupture had returned. For the first time he found that after patient and persevering efforts he could not reduce the hernia.

It descended at about three o'clock in the afternoon. Two hours later a local practitioner was summoned, but failed to reduce it. Constitutional symptoms having developed, the patient was advised to seek admission to hospital.

The great pain at the seat of the protrusion, which was very large, and the constant vomiting and great exhaustion, all pointed to strangulation.

The operator said he approached the case with two objects in view. The first and most important was to relieve the obstruction by dividing the constricting band wherever it might be located; then to complete the operation with the object of a radical cure of the hernia.

Here he referred to the defective structural development; the deranged and confused anatomical position of the parts; which should be considered before deciding on the precise surgical measures which might prove most efficient in obtaining a cure.

Important questions were:

Did the fœtal type still persist?

Was there an undescended testicle or one lying somewhere in the inguinal canal, or, further, if the testicle had descended, was it adherent to the floating viscera of the abdomen, carrying a portion of them to the base of the scrotum?

Was the fault due to an excessive amount of omentum or an abnormally long mesenteric ligament?

The operation was begun by the long, free incision. On reaching the deeper structures it was at once manifest that the case was one of the congenital variety. There was no true sac. The immense mass of extruded omentum lay in apposition to the tunica albuginea of the testicle, but was not adherent to it.

On finding this condition Dr. Manley stated that he would be unable to do the classic operation of McBurney, which he had hitherto performed with most gratifying results in strangulated hernia. He would do a modified Macewen operation, or what might, perhaps, be designated a "McBurney-Macewen operation." He would ligate the sac off without sacrificing the testicle, and fill in and obliterate the greatly enlarged space between the pillars of the ring.

In order to do this, after ligating and cutting away the superfluous omentum, the remaining stump was fixed in the canal with the quilted suture, after the plan of Macewen, while the remainder of the operation was completed after the McBurney method—the cutaneous margins of the wound sewed down to the peritoneum—and the whole treated by the open method.

The second case for operation was a boy of seven, who had had his hernia since birth. His father had taken him to travelling charlatans during the first few years of his life, but lately had consulted several well-known surgeons. There was a great difference of opinion as to what the swelling really was, and as to the plan of treatment; some maintaining that it was a hydrocele or an encysted spermatocele, etc.; some recommended operation and others advised against it.

There were a few points unmistakably clear in connection with this case. The first was, that there was a protrusion that increased in size with the boy's growth, and that could not be reduced. Again, its growth was rapid, and it became so prominent, under the trowsers, that it attracted notice, and hence brought down on the lad the jeers and banter of other boys, so that the little fellow himself was anxious to get rid of it.

Thorough antisepsis being observed, the operation was commenced with the usual long, free incision over the line of the spermatic cord, from the internal ring downward. Here, as in the preceding case, there was no sac, but after freely opening the tunica vaginalis, which invested the protruded mass, it could not be replaced in the abdomen with ordinary taxis. The enlargement consisted of nearly twelve inches of intestine. It was found, on careful examination, that the reason the gut failed to return was not resistance from above, but because on its mesenteric border the vas deferens, the epididymis, and testicle were in one confused mass, all bound rigidly to the intestine by organized fibrous tissue, which had to be divided with the scissors.

After having thoroughly freed the bowel, the atrophied testicle was removed high up, when the gut itself was returned and the peritoneal cavity closed, by ligating

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off the fascia propria on a line with the internal ring. The wound was treated by the open method.

Dr. Manley next exhibited a man, seventy-three years of age, on whom he had operated successfully three months previously.

The man had a large incarcerated hernia on each side, which, he said, had annoyed him for more than forty years. At first they were reducible, but owing to badly fitting trusses a localized peritonitis had developed, which ended in the firm adhesion of the sac to its contents; and had, in this instance, as is usually the case in all after a sufficient time, produced what is known as incarcerated hernia.

Dr. Manley asked that the great difference in age be noticed in these two cases, and said that neither extreme constituted an obstacle to operative measures, if the patient was in sound health. On the other hand, in congenital hernia he would advise the operation at the earliest possible date; preferably before the infant was a month old.

NOTE.—The two cases operated upon made excellent recoveries, and were dismissed from the hospital, cured, six weeks later.

ORIGINAL ARTICLES.

GENERAL OBSERVATIONS ON THE USE OF ELECTRICITY IN GYNECOLOGY.[1]

BY A. D. ROCKWELL, A.M., M.D.,
PROFESSOR OF ELECTRO-THERAPEUTICS AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

UNTIL a recent period the advances in the therapeutic uses of electricity were more especially along the line of those distinctively nervous affections that were neither specific nor structural in their nature. Cases of this latter type have always yielded but meagre results under electrical treatment, and I do not know that any competent authority seriously claims for electricity in most cases of structural disease of the central or peripheral nervous system, more than temporary and palliative effects. And yet those who, arguing on the side of their prejudices, or out of the fulness of their ignorance of the subject, ascribe to electricity a very low place in therapeutics, do so mainly on the basis of its failure to cure a class of conditions incurable by any method of treatment.

The statement that as a therapeutic agent "the effects of electricity are limited," must indeed seem a rash observation to those who have had repeated evidence of the wide range of its influence in the relief of nervous symptoms, and especially so to those who have witnessed the really remarkable relief so often afforded by intra-uterine applications of the galvanic current. When a man possessed of the experience of Keith, of Edinburgh, can say that many are prejudiced against electricity because they consider it quackery and know nothing about it; that his confidence in its power to relieve disturbing symptoms of uterine fibroids and to cure many chronic inflammatory conditions of the pelvis, continues to increase, and that he has no fear for the future of electricity, we have testimony that must greatly outweigh assertions and opinions that are purely negative.

In a recent and animated discussion of the subject at the Société de Chirurgie of Paris, equally favorable opinions were advocated by the majority of those engaged in the debate, and the strength of these opinions was accentuated by the fact that the majority of those who hold them are signally distinguished as laparotomists.

I do not propose here so much to give the results of my own experience in gynecological electrotherapeutics as to allude, and very briefly, to some points in the rationale of its effects.

I call attention first to the faradic current. Its effects are mainly mechanical, and according to the construction of the helix and the length and thickness of the wire do we measure its action on the muscular tissues of the uterus. Applied directly to the uterus of animals in physiological experiments, the organ visibly contracts, although not to such an extent as the intestines, which, on application of the electrodes, can be seen to draw up gradually very much after the manner of a woman's work-bag. Its action on the smooth muscular fibres of the human uterus, when applied therapeutically is analogous to that of ergot, although manifestly more prompt and energetic, especially under the influence of the positive pole, which possesses a much greater power over the involuntary muscles than the negative. It is a current of alternation, of constant closing and breaking, hence it produces a sort of interstitial massage, heightening the activity of the circulation, accelerating absorptive processes, and influencing favorably the nutrition of parts.

Faradization, by its power over muscular contractions, sensibly increases temperature. According to the chemistry of the development of heat during muscular contractions, muscular work is the result of the decomposition of nitrogenous substances, and the muscles grow at the same time that they work and develop heat. That the value of the faradic current is more limited than the galvanic in the treatment of uterine disease must be immediately manifest to all who appreciate the difference between them, but in some conditions which come within the range of its physical and physiological activities, the faradic current may exceed in efficiency the galvanic. By its direct excitation of the smooth muscular fibres of the uterus we are enabled to combat that stasis of the circulation which is the beginning of uterine inflammation.

By this method we obtain a veritable interstitial

[1] Read before the New York Academy of Medicine, Section in Obstetrics and Gynecology, November 27, 1889.

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massage that is potent in overcoming the primary inertia of the organ, and in preventing an arrest of retrograde metamorphosis, through which comes sub-involution with its inevitable and persistent sequelæ. In its purely local influence, then, faradization would seem to be preventive rather than curative, as it relates to uterine disease; or rather it is preventive so far as concerns the latter condition of uterine engorgement, and curative only in its initial stage. When the processes that go to make up the graver and more chronic diseases of the uterine parenchyma and its lining membrane have continued a long time, as is usually the case when medical interference is sought, the simple mechanical effects of the faradic current would be altogether misdirected.

Here we resort to the electrolytic influence of the galvanic current, or rather to what may be more fitly termed its galvano-chemical cauterizing effects through which are destroyed the granulations and fungoid growths of the diseased mucous membrane. By the interpolar influence of the current we correct a languid nutrition and hasten the absorption of exudations.

Just as the positive pole of the faradic current has an action of its own, superior in effect to the negative in causing uterine contractions, so the positive pole of the galvanic current has an action peculiar to itself. Here oxygen is generated and acids accumulate, which render this pole directly hæmostatic. It is, therefore, indicated in all hemorrhagic conditions, as well as where there exists an excess of the natural secretions. Owing, also, to the greater retractibility of cicatrices following positive galvano-cauterization, the results are more lasting in the treatment of fungoid growths, or vegetations, than could possibly be the case with the negative pole.

At the negative pole, on the contrary, the alkalies precipitate, imparting caustic properties and causing effects fluidifying rather than hæmostatic. The absorptive process is undoubtedly more active under this pole than under the positive, and is especially indicated in indurated chronic metritis and for the resolution of fibroids.

That the galvanic current often completely dissipates fibroid tumors of the uterus few will, I believe, affirm. In the treatment of scores of fibroids on the external surface of the body, I have never yet seen a single instance where one of them completely disappeared. As a rule, the reduction is comparatively slight, unless suppuration is excited, which may be easily done. External fibroids are simply unsightly, and for this reason we desire to be rid of them, and as it is not possible to obtain more than a reduction in size, the knife is to be preferred, and electrolysis has fallen into disuse. We treat uterine fibroids, on the contrary, not because they are unsightly, but because associated with them are a train of symptoms sometimes of the most distressing character. These symptoms can, it is believed, be relieved to a greater or less extent by electrolysis, and sometimes so completely relieved as to lead to the belief, so far as the patient is concerned, that the tumor has entirely disappeared. In the great majority of cases, however, it is simply a symptomatic cure. The tumor is still there, but reduced in size, and so far as pressure upon surrounding parts is concerned, or any hemorrhagic tendency, is entirely harmless. I am a firm believer in the great utility of the galvanic current in the thickenings and infiltrations resulting from inflammation of the pelvic cellular tissue. For the absorption of old exudations in other parts of the body, this treatment has long been used with excellent results, and in pelvic exudations the results are even better. I have seen the treatment, persistently carried out, result not only in the absorption of large pelvic deposits, but in the cure of the most obstinate and severe sciatica, and in the restoration of power to partially paralyzed limbs. In such cases, both sciatica and paralysis are caused, undoubtedly, by pressure upon the pelvic floor, and can be relieved only through the dissipation of the morbid products.

There are two methods of action through which we obtain results from electrolysis. The first and most apparent is the absolute destruction of tissue which takes place at the time of treatment. Some suppuration may follow, and thus, by an actual loss of substance apparent to the sight, the tumor decreases in size. If, however, these were the only active forces in the electrolytic process, the method would lose much of its effectiveness.

If this be not so, how can we account for the many well-attested cases where morbid growths have entirely disappeared under simple external applications? Herein is the difference between the electrolysis of organic and inorganic substances. In the electrolysis of inorganic substances the effects cease as soon as the current ceases, the substances remaining in the condition that the current left them. The electrolysis of organic substances, on the contrary, starts a process that continues long after the current ceases to flow. Beside this subsequent effect, the current penetrates the tissue and induces various important changes beyond and beneath the eschar, and these combined agencies do far more, in many cases, to diminish the size of morbid growths and prevent further development than an actual destruction of a limited area.

A word in regard to the use of electricity for the relief of pain. No one can deny the excellent results that frequently follow the application of the galvanic and, indeed, of either current in uterine and ovarian pain, and as a somewhat extraordinary

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illustration of this I beg, in conclusion, to relate briefly a single case:

The patient was a married woman, aged thirty, and was referred to me, March 15, 1886, by Dr. J. O. Farrington, of this city, under whose care she had been for some time. She sought relief for pains in the ovarian region that were not only excessive, but most persistent, in spite of all efforts for her relief—including extirpation of both ovaries.

She had suffered more or less at each menstrual period for six or seven years, but for two years previous to the operation to which she had submitted, the pain had been so agonizing as to render her life absolutely unendurable. While the menstruation was scanty, it was nevertheless always on time, and continued during a period of nearly two weeks in a halting, irregular manner and with few intermissions. Everything attempted for her relief having failed, it was proposed to remove both ovaries, a proposition to which the patient eagerly consented, and, on the 3d of July, 1884, the operation was successfully performed by Dr. T. G. Thomas.

To the concern of all interested, however, the periodical appearance of blood still continued to some extent, associated with pains less acute, but still of a severe type.

The flow gradually disappeared, but the pains increased, coming on at regular intervals until, at the end of nine months, they were quite as distressing as at any previous time, and so continued until I saw her, through the kindness of Dr. Farrington, about a year subsequently. Under internal applications of the galvanic current, varying from twenty-five to fifty milliampères in strength, the paroxysms began to yield rapidly, resulting in a few months in a complete and what has been demonstrated a permanent recovery, for in the three years that have elapsed since the treatment was discontinued there has been no return of pain.

A very important practical question must immediately suggest itself to every one who reads the account of this case, as it did to the patient herself. If the treatment by the galvanic current had been attempted first instead of last, would it have been necessary to perform the formidable operation that she underwent?

While I cannot presume to answer this question, it is self-evident that an agent like the galvanic current, possessing such a marked influence over so many forms of pain of obscure origin, should precede rather than follow severe operative procedures for their relief.

THE TREATMENT OF CERTAIN PELVIC TUMORS BY GALVANO-PUNCTURE, DRAINAGE BY THE VAGINA, AND INTRA-UTERINE GALVANIZATION.[1]

BY AUGUSTIN H. GOELET, M.D.,
OF NEW YORK.

I DESIRE to be understood, in the beginning, as referring only to such tumors as are easily accessible by the vagina for galvano-puncture, and to those which are so intimately associated or connected with the uterus as to be influenced by the chemical galvano-caustic applications to the endometrium, and trust that I may be pardoned for including under this caption pyosalpinx and hydrosalpinx.

The subject of aspiration and drainage by the vagina is not new, but it is a method which has been almost abandoned of late in favor of laparotomy and drainage through the abdomen. I believe, however, than I can present it in a more favorable light than has heretofore surrounded it. With our present perfected knowledge of antisepsis, there cannot possibly be the same objection to this outlet which formerly existed; besides, the addition to our resources of the antiseptic power of the galvanic current renders puncture and aspiration by the vagina harmless, when the condition is appropriate and the degree of penetration is limited. Apostoli says:

"I have found that the galvanic current sent through culture media of pathogenic microbes is *germicidal*, which confirms what I said long ago, that this current was *antiseptic*, and would *attenuate* or *sterilize* certain conditions of germ growth."

This, then, is one explanation of the success following vaginal punctures and aspiration by this method. I refer more particularly to the method of aspiration and drainage of fluctuating tumors by the vagina, as described in the *New York Medical Journal* of June 8, 1889. And I think that the general good results which I have obtained justify me in preferring and strongly advocating this method of treatment, in certain appropriate conditions, in lieu of other methods now in vogue.

Dr. H. R. Bigelow, in THE MEDICAL NEWS, May 18, 1889, writing from Paris, says:

"In the French Academy of Medicine they are discussing methods of drainage by uterus and vagina, without the necessity of operating, so that the minds of the surgeons themselves are turned in conservative directions. I am sure that the time is in the near future when electricity shall solve the riddle."

As there may be some who have not read the article to which I refer, I will briefly describe the method and the trocar and canula which I use. It is a very fine silver canula, the size being No. 4 of the French scale, with a steel trocar, and covered with a slide of insulating material, which may be fixed by a screw to the shaft of the canula, so as to limit the degree of penetration. It is only capable of penetrating two centimetres, and it is seldom necessary to exceed one centimetre. The trocar is arranged for connecting with the battery, and the canula is made so as to be easily attached to an aspirator.

The method of application is simple; after deciding upon the degree of penetration necessary, the

[1] Read before the New York Academy of Medicine, Section in Obstetrics and Gynecology, November 27, 1889.

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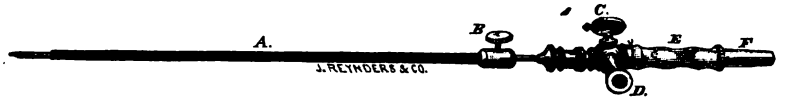
slide is fixed, and the trocar point is drawn within the canula. The vagina and vulva are douched thoroughly with a solution of bichloride, the index finger is introduced and, taking care to avoid any pulsating vessel, the most dependent point is selected. Then the canula, with the point of the trocar concealed, is passed along the finger until it impinges against the point selected, the trocar is pushed down into place, and the canula is made to penetrate to the limit fixed by the slide. The trocar wall, and where fluctuation may be distinctly felt. These tubes are usually fixed by a mass of exudation.

In these conditions, Apostoli adopts a somewhat different course. He punctures with his ordinary puncture needle, and allows the pus either then or subsequently to drain into the vagina through the puncture. But it appears to me that the method here suggested is better, because it at once gets rid of the accumulation which is a constant menace to



The cut shows a platinum canula and trocar (No. 4, French catheter scale) made for me by Mr. Reynders, for the galvano-tapping of pyosalpinx through the vagina. The shaft is covered with an adjustable sheath (*A*) of hard rubber for insulation. This may be fixed at any point by the screw *B* and the degree of penetration limited. At *C*, there is a three-way stopcock, and at *D*, a connection for an irrigator, as well as a socket for connecting with the battery. When the trocar *F* is withdrawn, an aspirator may be attached to the rubber tubing *E*, and, after the pus has been drawn off by a quarter turn of the stopcock *C* the cavity may be flushed with an antiseptic solution, passing in at *D* through the canula. By turning the stopcock straight again, the fluid is allowed to escape through the tubing *E* into the aspirator bottle. Care must be observed not to over-distend the Fallopian tube, the walls of which have been much weakened in some cases. That I may not be misunderstood, I repeat that I limit the degree of penetration usually to one centimetre, and deem the procedure appropriate only when the tube is close to the vaginal wall, full and tense, demanding immediate interference.

being then withdrawn, if no fluid escapes, the slide is readjusted lower down, and the canula, without the trocar, is introduced a little farther. When the fluid has been evacuated, the trocar is partially re-introduced and connected with the battery, the circuit being completed by a large clay electrode on the abdomen or back. In hydrosalpinx, the negative pole is used through the canula, with not more than 50 M. for five minutes; but in pyosalpinx, the cavity must be washed out with an antiseptic solution, as an extra precaution, and I prefer the positive pole because it is less irritating, and is believed to be more antiseptic, using 50 M. for five minutes. When the positive pole is applied, a canula made of platinum should be used, as the silver would be acted upon and unnecessary irritation provoked.

The cauterization of the track of the puncture by the current shuts it off from the surrounding tissues and renders the absorption of septic material through that channel impossible, and by using a safe intensity, not exceeding 30 to 50 M. for five minutes, nothing unpleasant is to be apprehended. (The higher intensities necessary for fibroids are not to be thought of in these conditions.) The opening remains pervious a short time for drainage, and closes readily when it ceases, and if a dressing of iodoform gauze is frequently renewed in the vagina, there is nothing to be apprehended from that source. Resolution in the diseased tube is promoted by the influence of the current and is subsequently still farther favored by mild positive galvanism of the endometrium, which will likewise be appropriate for the co-existing endometritis. I limit this treatment by aspiration to such tubes as are close to the vaginal the patient as long as it remains, and the cavity is rendered aseptic and put in the best possible condition for resolution. Dr. Bigelow says he has seen Apostoli puncture a pyosalpinx, enlarge the opening, and insert a drainage-tube with good result.

This treatment of hydrosalpinx was suggested to me by the radical cure of three cases of hydrocele by the same method. They had repeatedly refilled after ordinary tapping, but never refilled after using negative galvanism through the canula.

Small cysts close to the vaginal wall have been successfully treated in the same way. I have found one application usually sufficient in these small cysts, when the fluid is drawn off first and a current of 100 M. to 150 M., negative, is used through the canula.

The fibro-cyst is sometimes more obstinate in yielding to this treatment, especially those lined with a secreting membrane. Some I have found to yield to one tapping and negative galvanism of 100 M. through the canula; but in other cases it has been necessary to make the application directly to the cavity. This is done by enlarging the opening with gradually increasing sizes of conical electrodes connected with the negative pole, until it will admit a bulb-electrode into the cavity. This bulb is fixed upon a small insulated shaft which is flexible, and through it a current of 150 to 200 milliampères is concentrated within the sac. If drainage is not perfect through the opening, a rubber drainage-tube is inserted and fastened in position. A frequently renewed dressing of iodoform gauze is kept in the vagina.

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I will cite one case here which will illustrate the success following this method of treatment:

The patient is married, and forty-one years old; one child at term, and one miscarriage. She has suffered for eight years at her menstrual periods with severe pain in the left side of the pelvis, radiating down the thigh, which often compels her to remain in bed for days at a time. Two years ago she was induced to visit the clinic of the Post-graduate School, where she saw Dr. Bache Emmet, who diagnosed a fibroid tumor the size of a quart bowl. She was placed under the care of Dr. A. P. Dudley, who offered to remove the ovaries. This she declined. She continued to suffer, growing worse all the time, the attacks of pain being more severe and their duration longer, so that never a month passed that she did not find it necessary to keep her bed for ten days to two weeks at a time, and, at the same time, keep under the influence of opiates. This was her condition in February last when she consulted me. I found the tumor to the left of the uterus, to which it was attached near the cervico-vaginal junction, and close to the vaginal wall. I also diagnosed a fibroid, and commenced treatment by galvanism. The intra-uterine applications were not well borne, so on February 26th, I made the first negative galvano-puncture through the vagina, using 250 M. for five minutes. This puncture was immediately followed by a discharge of an ounce and a half of yellow fluid, which caused me to suspect the cystic character of the tumor; but as it did not continue, and the tumor was very firm, I concluded that it was only a small cyst on the surface, which had been emptied.

March 5, the *second* negative galvano-puncture of 250 M. for five minutes was made. No discharge followed. Her menstruation appeared two days later, and there was much less pain than before.

March 12. Menstruation having ceased, the *third* galvano-puncture was made. This time the positive pole was used with 300 M. for five minutes.

April 10. The *fourth* galvano-puncture, negative, 200 M. for five minutes.

18th. The *fifth* galvano-puncture, negative, 200 M. for five minutes.

25th. The *sixth* galvano-puncture, negative, 200 M. for seven minutes.

A week after this puncture a copious watery discharge suddenly came from the vagina, and continued to flow away in gushes. Investigation showed that it had come from the last puncture-track. The opening was enlarged, and the sound could be passed up four inches into a cavity. All the fluid was drawn off, but the discharge continued for two weeks—as much as a pint a day.

May 18. A bulb electrode was introduced, and 150 M. negative galvanism applied to the cavity for eight minutes. Three days later all discharge ceased. She has had no pain since, and her menstruation has been normal. At the present time—six months since the last application—she is in perfect health. What remains of the tumor is about the size of a hen's egg. It gives her no inconvenience whatever. She has been seen recently by Dr. Dudley, who can vouch for her present condition.

The dermoid cyst may be treated in the same way as the fibroid cyst, when it contains only sebaceous matter, for the negative pole will soften it, and allow it to drain away. My experience is limited to one case in the pelvis, though I have succeeded in curing several on the surface of the body by this method. In this instance the tumor had been diagnosed as a small fibroma. At the first puncture a cavity was discovered, but there was no drainage from it. On enlarging the opening as before described, and exploring the sac, the nature of its contents was ascertained. Fifty milliampères negative galvanism were applied to the interior of the sac, a drainage-tube inserted, and a dressing of iodoform gauze placed in the vagina. This application was repeated every second day. Eight negative galvano-caustic applications were sufficient to empty the cyst completely. It soon ceased to discharge and healed up. Now, four months after, there is scarely a trace of it to be felt.

I fully realize that such treatment could have no effect upon the bone, hair, and teeth often found in these cysts, but these might be removed through the opening if the tumor was situated close to the vaginal wall. In the case just mentioned the cyst contained only sebaceous matter.

The condition known as chronic pelvic cellulitis, which is usually manifested by a mass of exudation in one or both broad ligaments, including the tube and ovary, and associated with salpingitis and endometritis, yields very satisfactorily to galvanism of the endometrium. But it is very important to begin the treatment with a small dose—say 20 to 30 M.—for three to five minutes every second or third day, using the positive pole. And it is sometimes even better to begin with vaginal applications. The dose may be increased to 50 M. as tolerance is established. Later in the course of treatment it may become necessary to substitute the negative pole or vaginal puncture to hasten absorption. This condition dooms the patient to a life of misery, constantly threatened with peritonitis. Laparotomy does not always cure; but, by galvanism, she can be promptly relieved of pain, the deposit is softened and absorbed, the inflammatory complications are removed, and she is eventually restored to health with her ovaries and tubes intact and with a chance of conception. A case of this kind has recently come under my observation, and though it is only one of many others, some points in connection with it may be of interest here.

The patient had a miscarriage two years ago, and an attack of acute pelvic cellulitis in January last, from which she recovered partially, so as to be able to go about, but always suffered great pain in the right

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side of the pelvis on standing, walking, or riding. Frequently the attacks of pain were so sharp as to send her to bed for several days, especially at the menstrual period. In the beginning of October she visited a clinic in this city, and was told that she had a tumor which was liable to burst and cause her death, and that it must be removed without delay. Careful examination, under chloroform, shortly after, when she consulted me, failed to reveal anything except a firm mass of exudation surrounding the right tube and ovary, and a retroflexed uterus partially fixed. The mass was extremely sensitive to touch, and the patient could scarcely walk a block. Treatment was begun with 30 M. positive galvanism, intra-uterine, three times a week, and the dose gradually increased to 60 M. She ceased to complain of pain after the sixth application. At this date she has had ten applications, and her improvement is marked. She can walk or ride any distance without pain or inconvenience, and is able to do her own work. The mass is less than half its original size, and not sensitive to ordinary pressure.

All of these cases, however, especially those of long standing, do not yield so readily to the intra-uterine applications alone, and it is then necessary to resort to vaginal galvano-puncture as advised by Apostoli. He uses a very fine needle, adjusted so as to penetrate only a half centimetre, using fifty milliampères, positive, for five minutes. I have seen marked benefit follow such punctures, both in my own cases and those which I saw treated at his clinic. The patients themselves remark the increased benefit following this form of treatment. It may be more painful at the time, but the result, they say, outweighs the pain of the application.

The intra-uterine chemical galvano-caustic applications exert a decided influence upon fibroid tumors attached to the uterus, but which are not accessible for vaginal puncture, especially if they can be treated by including the growth between the two poles for the interpolar action. Dr. J. H. Gunning, of this city, tells me that he has had remarkably good results from the interpolar action of the current alone.

It would seem unnecessary to add further testimony in favor of the treatment of uterine fibroids by electricity, since such authorities as Spencer Wells and Thomas Keith have abandoned hysterectomy and openly avow themselves in favor of Apostoli's method. But there are some who refuse to be convinced, and some who, having tried it improperly and failed, are unwilling to admit that any good can come of it.

As to fibroids,[1] it does not always dissipate the tumor entirely, but the size is very materially lessened; its growth is arrested, and the symptoms are relieved. The pain is promptly lessened, hemorrhage is absolutely controlled, and, as the tumor becomes reduced in size, the pressure symptoms are likewise removed.

It sometimes requires a great deal of patience on the part of the physician, as well as the patient, and strong confidence in the agent, to make both hold out to a successful end. Thomas Keith truly says:

"Apostoli's method, though slow, requiring much patience, tenderness of manipulation, and thought, is still sure in its results."

He also adds of electricity:

"My confidence in its power to relieve disturbing symptoms of uterine fibroids and to cure many chronic inflammatory conditions in the pelvis continues to increase, and I have no fears for the future of electricity. . . . Hysterectomy, remember, which is performed every day for a complaint that rarely of itself shortens life, kills every fourth or fifth woman who is subjected to it. This mortality must cease; it is not a question of surgery, it is a question of humanity. Every time that any disease can be cured without resorting to a bloody and dangerous operation, such as hysterectomy, progress is made in our art, and there is a gain to humanity, while surgery is the better of being purged of a deadly operation. Even the fact that in my cases of hysterectomy the removal of the uterus and ovaries was sooner or later followed by insanity in ten per cent. of the whole number, is enough for me to condemn any operation that removes these organs."

And this is the mature opinion of a most successful surgeon; one who was the first to lower the mortality of abdominal surgery.

The method of application should be more clearly explained and clinically taught in this country, for there are many to-day who have but a superficial knowledge of electricity, and some who are attempting to use this agent without even knowing the difference in the action of the galvanic and faradic currents, as well as many who do not realize the difference in the action of the two poles. This is a deplorable fact, but, nevertheless, true, as the following incident will attest:

A lady consulted me recently about a tumor which proved to be a fibroid growing from the right side of the uterus. She volunteered the information that she had no confidence in electricity, because her physician had been treating her for the past six months with that agent, and it had not only done her no good, but she was worse. He had told her that he did not himself think it was suitable for her case after he had given it a thorough trial. On inquiry, I learned that he did not possess a galvanic battery, but had treated her with a small faradic battery, even puncturing with that current. That man is prepared to denounce electricity as worthless. This patient has now been under my care since the middle of September, has had twelve positive galvano-caustic applications to the uterine canal, and one positive galvano-puncture. Previous to consulting me, she suffered constant pain, menstruated twice a month, and for

[1] Dr. Goelet stated that as others would discuss the subject of electricity in fibroids at the same meeting, it would be unnecessary for him to enter into it in detail.

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seven or eight days profusely. She has had no pain since the sixth application. Her last period, which was twenty-nine days after that of the previous month, lasted only three days. She is now progressing nicely, can walk or ride without pain or fatigue, and the tumor is smaller and very much softer.

After giving Apostoli's method, as I understood it, a thorough trial, I thought enough of it to visit him during the past summer and learn more about it. It is a mistake to suppose that any one can apply this method without special preparation or instruction. And I am now satisfied that Apostoli is but poorly understood by many who think they can grasp his ideas by reading his writings. It is necessary to see its practical application in order to comprehend it fully, and there is too much in the method to be learned in one or two visits to his clinic, even by those who understand electricity. A correct diagnosis is the first requisite, then experience alone will enable one to decide the course to be pursued, else the negative pole will be used when the positive is indicated, and *vice versa*. It is very necessary to understand the technique of the application and to have confidence to administer it properly, taking care that self-confidence does not overstep the bounds of prudence. Always respect the actual suffering of a patient, but do not be deceived by her nervous apprehensions. By knowing the condition, experience will tell you nearly how much of galvanism she can bear. Apostoli has pointed out that in fibroids there is a comparative insensibility of the endometrium to the current, and he also lays stress upon the fact of the increased sensitiveness of the endometrium in inflammatory conditions of the appendages. The fact being, that in all these last-named conditions there always coëxists an endometritis. But in uncomplicated endometritis the current is usually well borne. In treating diseases of the appendages, he says, begin always with the positive pole and a small dose and increase as tolerance is established. In fibroids, it is often possible to begin with 100 milliampères, and I have seen 200 used in the uterus without causing the patient manifest inconvenience. I have likewise seen galvano-puncture of 200 milliampères borne without much suffering when the pole used was positive. These and many other important points can only be appreciated by watching his work at his clinic.

I followed him closely while there, and came away more than ever convinced of the general utility of electricity in gynecology. One cannot but be impressed with the method of his work, his honesty of purpose, and conscientious painstaking toward his patients, as well as the courtesy extended the physicians visiting his clinic. He exhibits with the most perfect freedom the histories of his cases, the records of his treatment, and the results. Every case treated there may be examined and questioned by any one present, and, if you do not request it, you are invited to examine the patient and express your opinion. The notes of progress and the treatment are announced to all present, and recorded by his assistant, and one is at liberty to verify any statement that is made. Since I have seen for myself, I have been astonished at the statements made by others, which are so contrary to my own experience.

In conclusion, I desire to say that I do not think any one should condemn Dr. Apostoli or his method until they have visited his clinic and witnessed his work and his results.

243 WEST FIFTY-FOURTH ST., NEW YORK.

THE GALVANIC TREATMENT OF UTERINE FIBROMATA.[1]

BY E. L. H. McGINNIS, M.D.,
ELECTRO-THERAPEUTIST TO THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK; FELLOW OF THE NEW YORK OBSTETRICAL SOCIETY, OF THE PATHOLOGICAL SOCIETY OF NEW YORK, ETC.

I AM well aware that the above subject is one which has many times been written about, spoken about, and read about, and that there are few who have not already some idea of its utility; but there may be some who have formed opinions hurriedly or after insufficient trials, and as I welcome any additions to the literature on the subject, so have I ventured to hope that I could say something of interest to others.

It is needless for me to go into the history of this treatment of the uterine fibroid growth in detail, but as far back as 1871 Dr. Cutter had found the advantage of the continuous galvanic current, and since then many observers have been at work on it, and have from time to time published their memoirs on the subject.

There have been many different ways of applying the current to the tumor, all with the view of reducing its size and relieving the symptoms of this most unfortunate affliction; but I propose here to speak more especially upon a course of treatment which statistics and time have shown to be better in every respect than the others, viz., that first brought into prominence by its originator, Dr. Georges Apostoli, in an article read before the British Medical Association, in 1887.

He had then used it for five years, with most satisfactory results, and since that time he has steadily continued to study it in all its details, and reduce what had hitherto been a vague sort of empiricism to an exact science. This step in itself was all-important, for many had tried galvanism, with a large number of failures and only occasional suc-

[1] Read before the New York Academy of Medicine, Section in Obstetrics and Gynecology, November 27, 1889.

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cesses, and of the latter no one seemed to know exactly why good had been done.

By the introduction of improved electrodes and a good milliampèremeter, however, we are now able to accomplish results entirely satisfactory to the vast majority of patients treated by it, and most gratifying to the attending gynecologist, and it is my firm belief that ere long its use will be universally recognized as the proper course to pursue before resorting to an operation the dangers of which we all know only too well.

Even to-day we come into contact with empiricism regarding the use of electricity, as it is practised by charlatans or those ignorant of its proper handling. I have been told by patients, of the faradic, interrupted galvanic, and static currents having been used on them for the cure of their fibroids, and one told me not long ago that a female practitioner, supposed to be largely endowed with "natural electricity" (whatever *that* may mean), had treated her tumor with electricity by rubbing nearly all the outer layer of epithelium from her abdomen, and with the temporary relief which massage sometimes brings. Is it to be wondered at, then, that there are sceptics regarding its use?

Since my appointment as Electro-therapeutist to the Woman's Hospital several years ago, I have had abundant opportunity to test the values of the different methods of application, and have found the results of those cases treated by Apostoli's methods to be far better than the others. Puncture through the abdominal wall seemed to produce fair results in some cases, but I do not consider it as efficacious as Dr. Apostoli's method. Although the *modus operandi* of it is comparatively well known, a hurried description may elucidate much that follows.

He introduces one electrode, shaped like an ordinary uterine sound, into the canal, and the other, a moist pad of potter's clay, is placed upon the abdomen over a prominent nodule, if there be one, or at the upper limit of the growth, if it be rotund. These are then connected with the battery by the flexible conducting cords, one of which must reach the battery by way of the milliampèremeter, as the amount of current used is to be accurately measured. The current is then turned on, its strength increased very slowly and without shock, till the proper number of milliampères is reached, and is kept there from five to twenty-five minutes, depending upon the susceptibility of the patient, etc., and is then reduced in the same way, great care being taken to avoid any sudden break in the current, which would cause a shock to the patient. This method will answer for most cases in which the mass is situated in, or attached to, the fundus or anterior wall; should the situation or attachment be the posterior wall, galvano-puncture is resorted to, with a trocar-pointed electrode. Its application is as follows: A careful vaginal examination is made, and the posterior cul-de-sac thoroughly explored, any pulsating point being located, and avoided thereafter. When a spot free from pulsation is found, the end of a small celluloid tube is placed against it and the trocar-electrode, with the handle firmly screwed to the end toward the operator, is passed through the celluloid sheath and the puncture made to a depth not exceeding one to two centimetres. This celluloid tube answers a double purpose: that of insulating the needle from the vagina and of preventing the point from entering too far or beyond the distance intended and previously arranged for. Should much hæmorrhage occur when the needle is withdrawn, an accident I have never known to happen, a bivalve speculum can be introduced and forceps applied, or the positive pole be made to act as a hæmostatic.

This treatment is often administered without an anæsthetic, and the strength of the current should be no more than the patient can tolerate. It should also be remembered that the current itself, in two or three moments, has a distinct local anæsthetic effect, thereby lessening the pain and allowing an increase of quantity. A current of 30 milliampères has been found to produce benefit, and up to a certain point, stronger ones in proportion. I find that from 75 to 150 milliampères can be quite comfortably borne, and certainly produces most marked improvement.

While trying to get exact measurements of the tumor in every case, it is often extremely difficult to do so, owing to the presence of gas in the intestine behind the mass, to the thickness of the abdominal walls, etc. One thing that I have noticed is misleading, viz., that in some cases which have been treated by this method, as the tumor diminishes in size an increased amount of adipose tissue is found in the abdominal wall. This point should not be overlooked when external measurements are taken for comparison with former ones.

The *proper* use of the poles is of the greatest importance. To make a definite rule as to which should be used internally is impossible, as the nature of the symptoms will be our guide. In the class of non-bleeding fibroids, the *negative* pole is indicated for two reasons: first, because it seems to curtail the supplementary circulation by means of the rapid atrophy it causes, especially where puncture is made, and, second, because Dr. Apostoli has found that in bringing about a reduction of the mass, it is quicker. For the treatment of bleeding fibroids, the hæmostatic action of the positive pole has been too well proven to require extended notice. Not one single case of this kind which I have treated by the Apostoli method has failed to give the greatest satisfaction to both patient and myself. Cases have come to

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me nearly exsanguinated, and I have managed by this means not only to stop the hemorrhage, but, to my delight, prevent its return. Surely, had the treatment no other merits, this one in itself would entitle it to a fair trial before operative procedure is resorted to.

It is not my intention to claim any more than can be proved by many who are using it to-day, nor that a few applications of it will cure any and every fibroid with which it is possible for one to meet. That it is slow in its effects I know, and we must not be disappointed if marked diminution in the size of the mass is not noticed at once. The great majority of cases show little change under a month of treatment, which should be applied three times weekly. But I have found one (very rarely, two) thorough applications quite sufficient to control the most obstinate hemorrhage, provided a sufficiently strong current is used, and, what is *most* important, that every part of the endometrium be brought in contact with the electrode. This is sometimes very difficult, as the canal may be tortuous, and the stiff electrode then fails to touch some spot where there is bleeding. This may be provided for by the use of a flexible electrode, which is insulated to its platinum tip, which latter should be three-fourths of an inch long and shaped like a probe, but of larger calibre. Having passed it to the entire depth of the uterus, it is held there, with one finger against the os, long enough to cauterize the parts in contact with the tip (the time to depend upon the strength of the current used), then gradually withdrawn, a very little at a time, till the entire endometrium has been cauterized. Should there be fungoid growths present, causing some if not all of the hæmorrhage, they will be destroyed at the same time, thus answering the purpose of curetting, and without leaving a fresh bleeding surface within the uterus.

All these measures should be carried out in a rigidly antiseptic manner, washing out the vagina with a bichloride or carbolic solution, before and after each application, and immersing the intra-uterine electrode in a saturated solution of iodoform in ether, just before introducing it. The ether instantly evaporates, leaving a thin deposit of iodoform on the electrode. Should germs even then be present, the current will be more than sufficient to destroy all life in them.

No new method of treatment is brought before the profession without its detractors. This I consider most fortunate, as it leads to discussions and narrations of cases which cannot fail to instruct us, and many interesting features are thus developed, which are of the utmost value.

One of the objections raised to the employment of the Apostoli method is the danger of a current strong enough to produce beneficial results. *Improperly* used, I grant that damage may be done; but does a badly managed case of hysterectomy always get well? I would ask those who have made this objection to compare the results of the laparotomists with those who have treated an equal number of cases by this method; the latter will be found much less dangerous to the lives of the patients, to say nothing of the long convalescence, pain, possible mania, inability to continue in daily avocations, and hæmorrhage during or after the operation. The experience of such well-known gynecologists and authorities as the Keiths, father and son, Sir Spencer Wells, Woodham Webb, Playfair, and others in Great Britain alone, must certainly silence many objections regarding its inutility, while in this country, men of undoubted ability have met with results far beyond their expectations. Often the patients themselves can judge of their improvement quite as well as the attending gynecologist, for who knows better than they that the pain and sense of pressure, the dreaded hæmorrhage, the headache and backache so constant, as well as other reflex symptoms, are not what they once were? Who can tell better of the apparent loosening of the waistbands attached to their clothing?

I have now under my care a case sent me by Dr. T. Gaillard Thomas, through whose courtesy I am enabled to report it:

The patient was first seen by me in February of this year, and her history revealed the fact that she had noticed the enlargement in her abdomen four years ago; she had all the usual symptoms, including several most severe hæmorrhages, each of which had left her nearly bloodless. She was emaciated to an alarming extent, her pulse was weak, and she felt perfectly certain that the next hæmorrhage would be her last, and that she could not recover from the effects of a hysterectomy. Her tumor was situated in the fundus, and extended to the ensiform cartilage; her waist measured forty-four inches in circumference, and examination revealed that her uterus was five and one-half inches deep. Fortunately the canal was straight, so I had little difficulty in introducing the electrode, and thoroughly cauterizing the endometrium. I began treatment at once, and continued it with two intermissions of two weeks each, when she was obliged to leave town, and also during her menstrual periods, till my departure for Europe, the last of June, and did not see her again till on my return, October 1st. She has had no renewal of hæmorrhage: her tumor is now down to the umbilicus; is not tender, and gives her no pain; the canal is three and one-fourth inches long, and she can walk to my office, nine blocks from her home, three times weekly for her treatment, and can undergo the fatigue of a day's shopping with only a moderate amount of discomfort.

I could occupy the reader's attention with the narration of other cases were it advisable; but I

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feel that I cannot close this paper, already too long, without reference to an article written by Dr. Thomas Keith, of London, and published in the *British Medical Journal* of June 8, 1889. In it he says:

"What I now plead for is, that for a time all bloody operations for the treatment of uterine fibroids should cease, and that Dr. Apostoli's treatment, *as practised by him* [the italics are mine], should have a fair trial. Those who have hitherto most resisted the introduction of electricity are the surgeons who are best competent to carry it out. They are accustomed to manipulate in the pelvis, and they will not make mistakes of diagnosis, or make them as seldom as it is possible to do. Hysterectomy, remember, which is performed every day for a complaint that rarely of itself shortens life, kills every fourth or fifth woman who is subjected to it. This mortality must cease; it is not a question of surgery, it is a question of humanity. Every time that any disease can be cured without resorting to a bloody and dangerous operation, such as hysterectomy, progress is made in our art, and there is a gain to humanity, while surgery is the better for being purged of a deadly operation." . . .

"It may seem strange to some, that after the results I got in hysterectomy—results which almost make it justifiable—I should now begin to throw stones at the operation, instead of trying still further to improve upon it; and but for Dr. Apostoli, I should now be doing so. I would give something to have back again those sixty-four women that I did hysterectomy for, that I might have a trial of Dr. Apostoli's method upon them; and I would give something never to have had the tear and wear of flesh and spirit that these operations cost me, for in scarcely one of them was the operation simple.

"I have, in the meantime, said my say, and it must not be forgotten that the opinion here expressed as to the value of Dr. Apostoli's treatment is not that of an unsuccessful surgeon, but is the deliberate opinion of one who was the first to lower to a minimum the mortality that so long followed abdominal surgery, and who, by the best results yet obtained in hysterectomy—results that Dr. Playfair is pleased to call almost phenomenal—still retains that position."

What can I add after such an opinion as the foregoing? I can simply say that my experience with Dr. Apostoli's methods, while large, is more than satisfactory, and in quoting Dr. Keith's praise and thorough indorsement of it I have expressed my own views.

While abroad on business last summer, I was enabled to visit Dr. Apostoli's clinic and to satisfy myself on many points regarding his histories and statistics, and I earnestly advise all who can possibly make an opportunity, to see him at his work in the Rue du Jour, to do so.

You will be welcomed by a most charming and courteous gentleman, who will give you every possible opportunity not only to see him operate, but to examine his cases and their histories, talk with them, ask them any questions regarding their condition and treatment that you may see fit, and, in fact, satisfy yourself on every possible point of the truth of his assertions and the merits of his methods. You will also meet colleagues from Germany, Russia, Scandinavia, and the South of Europe, as well as many English surgeons of renown, a few South Americans, and, I am proud to say, a goodly number of our own countrymen; and nearly all have the same opinion as to the merits of Dr. Apostoli's treatment, and seek his clinic for further instruction.

In conclusion, let me urge upon the reader to give this method a *proper* and *thorough* trial before rushing his afflicted patient to the operating-room, there to undergo the dangers of the knife.

35 WEST THIRTY-EIGHTH ST.

NOTES ON THE TREATMENT OF FIBRO-MYOMATA BY ELECTRICITY.[1]

BY A. H. BUCKMASTER, M.D.,
ASSISTANT SURGEON TO ST. PETER'S HOSPITAL, BROOKLYN, N. Y.

THIS method of treatment has been before the profession for several years, and, while the consensus of opinion is decidedly in its favor, there are many who are disposed to deny its efficacy. The treatment requires patience, it is slow, and in cases where the tumor is treated solely on account of its size it is often impossible to gauge accurately slight variations. Constipation, flatulence, increase in adipose tissue, congestion or œdema, all are apt to mislead and perplex the observer. There are several means by which the sceptical may become convinced that the treatment is valuable.

First. By statements of individual observers, many of whom have not only claimed relief from symptoms and decrease in size, but also total disappearance of myomatous masses. The evidence of this class is most abundant.

Second. The testimony of individuals supported by the observations of disinterested witnesses. This can best be obtained in the hospitals, and a competent man should be invited to test the cases, who should be a thoroughly practical gynecologist as well as an electrician, and competent to recognize the contra-indications for treatment.

Third. The presentation of a reasonable explanation of the means by which the results are obtained. The explanation of the writer is founded on experiments on the non-striated muscular tissue of the dog's heart and on fibroid tissue outside of the body. The experiments were as follows:

The heart of an anæsthetized dog was exposed and a current of forty milliampères made to traverse a portion of the ventricle. A piece of the ventricle in the direct line of the current was excised and another some little distance from the direct influence of the current. When examined under the microscope the piece from the direct line of the current showed that the striæ had become markedly granular, while the piece outside of the direct line of cur-

[1] Read before the New York Academy of Medicine, Section in Obstetrics and Gynecology, November 27, 1889.

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rent preserved the muscle cells unaltered. This granular appearance of the striæ would indicate degeneration of the muscle bundles. It is observed in fatty degeneration, and in such cases the contractility is much impaired. This is the first evidence of absolute molecular disintegration of living cells by the interpolar action of the galvanic current, where such process is confined to the cells.

The condition of rigor mortis is readily induced in a muscle through which circulation is maintained. The action of heat at 118° F., distilled water, acids even of the weaker kind, such as carbonic acid, bring it about. If death rigor occurred in any considerable part of the muscle tubes of the tumor there would result a marked diminution of its irritability, for it is a well-known fact that muscle under this condition ceases to respond to stimuli. To determine if this was so after treatment the following experiment was resorted to:

It is assumed that the contractions of the uterus are followed by contractions of the vagina which are in direct proportion to them. Kehrer[1] found in his experiments with rabbits, that exposure to air would give rise to a contraction which advanced through the whole genital canal, while by chemical, mechanical, electric, and thermal irritation contractions could be started at almost any point and were transmitted in one or the other direction, so that an increase in the vaginal pressure would indicate a contracted condition of the uterus. This method of indicating contractions of the uterus has been utilized by Milne Murray,[2] of Edinburgh, in his experiments on the effects of hot water on the uterus. The following method was adopted by the writer: A rubber bag by which the vaginal pressure is to be determined is filled with water and communicates by a rubber tube with the proximal arm of a U-shaped glass tube which contains mercury. The other arm of the glass tube is opened at the end. When any pressure is made on the bag the column is pushed back, and this raises the discus of the mercury in the distal arm. The variation can be read by means of a graduated scale. The chief sources of error in using this means of measurement arise from having air mixed with the water, or having the tube of such thin rubber that it readily becomes distended by pressure.

There are two methods of measuring the effects of stimuli on muscular contraction; one is by observing the comparative strength of the contraction, and the other is by ascertaining the smallest amount of current that will give a contraction; the latter method was in this instance adopted. The induced current with a sliding induction coil was used. The cell used was a constant one. The patient in position, the electrode was placed in the uterine canal. The bag filled with water was then introduced, and after waiting five or six minutes for the vagina to become accustomed to it, the faradic current was very gently turned on (the other arrangements being exactly similar to those used in the ordinary treatment) until contractions were induced in the uterus. The amount of this current was carefully calculated. The constant current was now gradually substituted by means of a rheostat until sixty milliampères were registered. In about a minute the column of mercury showed an increased vaginal pressure of one-sixteenth of a pound.

The current was turned off very gradually, and the patient allowed to remain perfectly quiet for twenty minutes; at the end of this time the slightest induced current that would give a contraction was considerably less than before the treatment.[1]

The above experiments only point out a line of investigation. The writer has not had the time to repeat and test them as should be done; he merely indicates from the standpoint of the clinician what the laboratory worker may establish or disprove. So much for the interpolar action. In regard to the action at the poles it must not be forgotten that slight traumatism of the cavity of the uterus has an important effect upon the nutrition of the fibroid, and that there are many cases where fibroids have spontaneously disappeared. Gusserow states that various operative procedures, sponge-tents, incision of the mouth of the uterus, and intra-uterine injections frequently cause sloughing of fibro-myomata by interference with nutrition from traumatism of the uterine mucous membrane.

It is not my intention to narrate the histories of my cases, which present nothing brilliant in the way of cure. In no case has there been lack of improvement, in no case have I seen disappearance of the fibroid.

In regard to the technique of the operation there has been but little improvement of late. The literature of the subject is, and has been, overburdened with descriptions of visits to Apostoli and of his methods. A thorough knowledge of French is necessary to form any adequate personal opinion of Dr. Apostoli's work, or to comprehend the statements of patients, and this requisite must present an insurmountable difficulty to many of these witnesses.

To Dr. Austin Goelet, of this city, is due a cheap and efficient electrode with which many electricians are familiar. One fact has, I believe, escaped attention in stating the dangers incident to these cases, and that is, chronic renal disease. Not only should the urine *in all cases* be examined for albumin, but

[1] Chadwick: Peristalsis of the Genital Tract. Trans. of Amer. Gyn. Soc., vol. x.

[2] Edinburgh Med. Journal, Aug. and Sept. 1886.

[1] Unfortunately the writer has been unable to repeat this experiment, but hopes that others may do so.

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the amount and specific gravity should be carefully considered. The writer has seen this complication assume most serious importance, and it should never be overlooked. In closing these brief remarks I desire to say that I believe that dissatisfaction in the treatment is usually due to failure in understanding and carrying out the principles enunciated by Apostoli.

207 CLINTON STREET, BROOKLYN.

BI-POLAR FARADIZATION IN GYNECOLOGY.[1]

BY A. LAPTHORN SMITH, B.A., M.D., M.R.C.S. ENG., F.O.S. LOND.,
SURGEON TO THE WOMEN'S HOSPITAL AND LECTURER ON GYNECOLOGY IN THE MEDICAL FACULTY OF BISHOP'S UNIVERSITY, MONTREAL.

ELECTRICITY is such a new subject and its different departments are so numerous that it is no easy matter for all of us to keep pace with its progress.

As is generally known, it was Faraday who discovered that an induced current of electricity is set up in a conducting wire which is placed near to, but not touching, another wire through which a current is passing. It is also well known that the appreciable effects of the passage of a current of electricity, either direct or induced, are greatly increased by the interruption of the current. Thus a continuous current of a hundred milliampères can easily be borne, while if the same current be interrupted it will promptly knock one down. By making the primary wire into the form of a coil and placing a piece of soft iron within the coil the iron becomes magnetic whenever the current passes, and this body of magnetized metal in turn intensifies the current in the primary coil. The primary coil should be made of moderately coarse wire so as not to offer too great a resistance for the battery to overcome, as the battery, which should consist of two closed cells in a separate portable case, must have sufficient electro-motive force to push through the coil. The secondary or induced coil deserves special attention because it will depend entirely upon the shortness and coarseness, or the length and fineness of the wire, whether you will obtain those almost magical effects which some have claimed for it. There are many who cannot believe that these differences are of any real consequence, and yet there is no fact in medicine of which I am more certain than that the results from these two wires are totally different. The coils which I have been using for the past three years are wound as follows: the short wire coil, which is about twenty-five yards long, and No. 14 or 16 in diameter, is insulated with silk and varnished between the layers. The fine wire is about No. 40, which is the finest made, and is about a mile long. The short, thick wire gives out nearly the whole quantity of current that is induced in it, and is, therefore, called the current of quantity, while the long, fine wire offers a tremendous friction or resistance to the passage of the current, and is, therefore, called the current of tension. I think this is a better name for it than current of *quality*, which it has sometimes been called. The current of quantity from the coarse coil, as has long been known, is an excellent tonic for muscular fibre, and I have used it to advantage in nearly every case in which the symptoms could be traced to defective muscular contraction. It should be placed high in the list of tonic remedies, although I do not think that it possesses any miraculous virtues which are not possessed to a greater or less extent by gymnastics, regular exercise, strychnine, quinine, ergot, hydrastine, and cold and hot water. This much can be said for it, however, that it is a tonic especially suitable for relaxation of those muscles which, owing to adverse circumstances, cannot be toned up by any or all of the above mentioned means, and, besides, it can be made directly on the muscles or group of muscles which are most at fault. By means of Apostoli's bi-polar electrode it is especially applicable to the muscular organs in the pelvis. For instance, in post-partum hæmorrhage we can surely obtain instant and permanent contraction of the uterus, no matter how exhausted it may be, by introducing the bi-polar electrode and turning on the coarse wire current.

For those obstetricians who are frequently meeting with this accident, a small battery which can be set in action in an instant, might well find a place in the modern obstetric bag. I must confess, however, that I have never put it to this use, for, although I have been looking for a case on which to try it, since I have been giving nature a little more chance I find that relaxation of the uterus is more and more rare. I have had, however, many cases of subinvolution due to the defective contraction of the uterus, accompanied by the usual symptoms, and they have invariably been promptly relieved, and in a very reasonable time cured, by *séances* with the bi-polar intra-uterine electrode with the current of quantity as strong as the woman could bear it, and lasting ten or fifteen minutes. But it must be remembered that no such gratifying results will be obtained if the enlargement is due to fibrous tissue instead of muscle. Areolar hyperplasia, like fibroid, must be treated by the continuous current. Another class of cases with which I have had very gratifying results are those of deformity and displacement of the uterus, due to relaxation of its walls or of the muscles which hold it in the centre of the pelvis. The presence of strong adhesions, however, binding it down in a wrong shape

[1] Read before the New York Academy of Medicine, Section in Obstetrics and Gynecology, November 27, 1889.

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or position, would diminish the probability, or even preclude the possibility of restoring it to its proper form or position. The cases in which I have been occasionally disappointed, were those in which the muscles of the uterine supports had undergone degeneration so long ago that there seemed to be little or no muscle left to work upon. In such cases I have abandoned this treatment for some more speedy one.

This treatment is not at all applicable to cases of bleeding due to fungous endometritis, or to the presence of retained placental tufts. In those cases it is our manifest duty to remove them with the curette or, in the case of fungosities, to destroy them with the continuous current. The coarse wire faradism, however, is comparatively well known, so I need say no more about it. The advantages of the bi-polar method are:

First. It is less painful than the old method because it does not require the current to pass through the skin, which is much more sensitive than the vagina.

Second. It is easier to apply because it dispenses with the need of an assistant.

Third. It allows a much stronger current to be tolerated.

Fourth. It is consequently more effective because the higher the intensity of the dose the more marked the effects.

These bi-polar electrodes are made with one pole at the extremity and the other separated from it by an interval of an inch or so of insulating material, so that the current has to go through the tissues to get from one pole to the other. In doing so, it seems to set up circles of induction in the neighboring structures, as proved by the following observation: when the current is started with a moderate strength from the fine wire coil the patient, if asked what she feels, will say that there is a numbness of about the size of a walnut. As you slide the secondary wire over the primary more and more, she will say that the area of numbness has increased to the size of an orange, and finally when the whole strength is on, the numbness will have invaded the whole pelvis, including the area of pain. This can only be accounted for, I think, by the fact that induced currents are set up in the successive layers of tissue, which in a way take the place of contiguous wires on the telegraph poles. These bi-polar applicators are made of several sizes; two or three for the uterus, varying from the diameter of the uterine probe to that of the ordinary sound; and as in certain cases, such as pregnancy, it may not be desirable to introduce anything into the uterus, there are several sizes made for the vagina. But one uterine and one vaginal electrode are practically all that are required. As a rule, the preference should be given to the intra-uterine applications because they are much more effective than the vaginal ones.

We now turn to a short description of the qualities, indications, and methods of application of the comparatively new, and in its effects almost magical, current from the fine wire. I have already said that it causes very little muscular contraction, but that it has the power of affecting the nervous system. The element of pain plays an important part in the diseases of women and very often exists where no organic lesion can be found. More especially is this the case with ovarian pain, a great many cases of which I have completely cured with less than a dozen applications of the fine wire faradism. How it does this I am unable to say. Apostoli thinks that it sets up vibrations in the nerves, travelling in an opposite direction to the ordinary or painful impulses. Perhaps the current of tension filling the nerve-fibres dams back the painful impulses, or perhaps the vibrations are so rapid that the conducting power of the nerves is temporarily lost; but I think that Apostoli's explanation is the best.

There are three kinds of cases in which I have found the fine wire bi-polar faradization remarkably beneficial. They are:

First. Ovarian pain where no organic disease could be found. I do not pretend for a moment that it would be of any use in even small ovarian cysts—the sooner they are removed by operation the better. When I see these on our society table I feel no regret that they have been removed; but when surgeons remove healthy ovaries on account of pain only, I feel sorry that they were not aware how easily that pain could have been relieved by fine wire faradism. The first sitting should last ten, twenty or even thirty minutes, if it is that long before the patient can say that her pain has gone; it is then well to tell her that she may expect the pain to return after a few hours, but that each day it will stay away longer and longer, until after a variable number of sittings, rarely more than ten, the pain will remain away altogether.

Second. In cases of abdominal pain due to hysteria it acts promptly, not only in rendering the abdomen insensitive to pressure but also in calming the general nervous crisis within a few minutes. This was one of the observations which struck me most at Apostoli's clinic, that women who could scarcely bear to be touched with a feather on the abdomen, could, after five or ten minutes of fine wire faradism in the uterus or even in the vagina, endure any amount of kneading and punching without the slightest discomfort. In fact, parts which before were hyperæsthetic had now become anæsthetic. This has caused the charge against Apostoli of curing such cases by means of hypnotism, but I feel sure that this is not the case, be-

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cause he does not possess that strange power, and besides many of the patients were totally ignorant of the nature of the treatment and its effects. This tolerance of hysterical patients for the full strength of the current of tension has often made me think that my apparatus was not working, until I attempted to test it on my own hand, when I found it unendurable with one-fourth of the intensity which the patient could easily bear. On trying the same strength on well women you will also find that they cannot stand a quarter of the dose that an hysterical woman can.

As I have already said, the current must be increased gradually in all cases, but *very* gradually when the pain is of an inflammatory nature. In bringing an application to an end, it is necessary to turn the current off before withdrawing the electrode, for the simple reason that the passage of the current over the much more sensitive vulva would cause the patient to shriek, although she could bear the same amount of current in the uterus or vagina without feeling it.

Third. There are many women about the age of thirty who, though fleshy and apparently well supplied with blood, do not menstruate at all, or but slightly. These women feel uncomfortable; their *embonpoint* makes them weak and they have many nervous symptoms which place them in the category of hypochondriacs. Anything that will bring on a full return of the menstrual flow gives them immense relief. I know of nothing that will attain this object more surely than three applications a week of the current of tension to the inside of the uterus, between the periods. Not only will the flow be reestablished, but the uterus, which before measured less than normal, will soon develop to its full size. I am aware that there are other means of doing the same thing, but none of them is so satisfactory as this.

Fourth. In vaginismus I have found it remarkably effective. The condition is due to hyperæsthesia of the nerve terminals about the entrance of the vagina, and is really a form of hysteria. In most cases the other symptoms of hysteria, as abdominal tenderness, etc., are present. In such a case the treatment may begin with one or two vaginal applications, after which it will be easy to introduce the finger and to use the intra-uterine electrode. In some cases the hyperæsthesia may be concentrated upon or limited to a small area as large as a ten-cent piece. The removal of the over-sensitive nerves has been recommended by Hilton for this often very intractable condition. Apostoli has devised an electrode for such cases in which the two poles terminate in two hemispheres of carbon placed side by side and separated by a thin layer of gutta percha. When this is placed on the hyperæsthetic spot the fine wire current is forced to pass through the tissues in order to get from one pole to the other. With this instrument the current can be localized on two or three over-sensitive papillæ. In the worst case of vaginismus I have had in twelve years the patient was cured by three applications and became pregnant at the next ovulation.

Besides these four indications Apostoli has advocated a fifth, with which I have had no experience, viz.: in pelvic pain due to inflammatory conditions of the uterus or its appendages. I have feared so to use it because of its well-known stimulating effects, although it is true that iodine acts in the same way in similar conditions. Those who wish to try it will do well to remember Apostoli's warning not to push the strength of the application beyond the point which can be easily borne, while, on the other hand, in pelvic pain of non-inflammatory or hysterical nature it is sometimes an advantage to push the current rapidly until its full strength is turned on.

There are also some troublesome conditions of the bladder in which I have used bi-polar faradism with advantage, but which I have not the space to describe.

Before closing, I wish to disclaim any intention of considering bi-polar faradism as the only remedy in gynecology. Many of the conditions which we are called upon to treat are the natural outcome of wilful or ignorant disobedience of the laws of health, and bi-polar faradism will not allow women to break them with impunity. Neither should we forget that the genital organs are not the only organs woman has, so that while we are calming her pain with electricity we should at the same time be removing the unhealthy conditions of the body generally, on which often the local disorder depends. All that I do claim for it is that it is a valuable addition to our therapeutic resources, especially in those diseases of women in which other methods of treatment often fail.

REMARKS ON ELECTRICITY IN GYNECOLOGY AND A NEW PORTABLE GALVANIC BATTERY.[1]

BY FRANKLIN H. MARTIN, M.D.,
OF CHICAGO.

APOSTOLI'S method, which was promulgated less than three years ago, first astonished, then excited the admiration of the entire medical world. Astonishment was expressed at a method which recommended such extraordinary means, and which claimed such brilliant results. Admiration was excited by the brilliancy of the author's conception and the thoroughly scientific grounds upon which it was based.

[1] Read before the New York Academy of Medicine, Section in Obstetrics and Gynecology, November 27, 1889.

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The instruments of precision introduced and made necessary by Apostoli's method have enabled us not only to prove or verify the value of his work and to substantiate his startling assertions, but to go on applying the sound principles he has evolved to the relief of many pathological conditions peculiar to the female pelvis.

One of the most important points to settle after the introduction of the high dosage system of treatment was the question of generation of current. We were aware that the ordinary batteries in use would give a maximum current strength through the body, from hand to hand, of but from eight to ten milliampères. Certainly, then (forgetting in practice what we only know in theory), we could not expect to get 300 milliampères with the same instruments. We soon found, however, from practical experience, that we were mistaken and that the battery which gave a current of but eight or ten milliampères through the enormous resistance of the body from hand to hand, would give a marvellously strong one through the comparatively small resistance offered by the abdominal walls and pelvic tissue, with properly constructed electrodes. We now know that the resistance offered by these parts with the clay, or some form of substitute for the clay electrode, is less than 200 ohms instead of 2000, as was originally supposed.

Any battery may be used which will give a maximum electro-motive force of fifty volts, with but small internal resistance, which is without vibration, undulation, or interruption, which can be perfectly controlled by the operator, and which can be gradually increased from zero to its maximum strength, and the reverse, without interruption. This includes the ordinary open circuit battery cells employed for office purposes, ranging in number from thirty-six to fifty—according to their electro-motive force. The Leclanché. the Law, and the Diamond Carbon are usually preferred. For all work, except when puncture is required with small exposure of needle surface (thereby increasing the resistance) or when extraordinary strength of current is required, the ordinary twenty-four to thirty cell zinc and carbon chromate of potash batteries, such as are manufactured by the Galvano-Faradic Battery Co., the Flemming, or the McIntosh Battery Co., are sufficient. My battery is the outcome of a series of experiments made with the end in view of bringing forth a small portable battery which would possess none of the objectionable features of the ordinary form and which would do the same amount of work as that required of the office stationary battery.

The cell is a form of the chloride of silver cell, of sufficient power to give an electro-motive force of one volt, and an ampèrage of $\frac{8}{10}$ ampère. So that a battery of fifty cells will do the same amount of work as thirty-six to forty Leclanché cells. A battery of thirty-five of these cells has done all of my outside work for a period of eight months, without change or renewal, and possesses greater working power to-day, because of decrease of its own internal resistance, than when I began. From experiments made with the battery it is estimated that it will run with ordinary use without recharging or without perceptible deterioration in strength from one and a half to two years. As the battery is free from action when not working, it will remain in active condition a length of time in direct proportion to the amount of work required of it. There are two sizes of this battery manufactured by the McIntosh Battery Co., of Chicago, one of thirty-five cells and one of fifty cells. The fifty cell battery will generate a current of 300 milliampères with the Apostoli electrodes or any of the approved modifications.

Next to the treatment of fibroid tumors of the uterus by galvanism, I have found the greatest satisfaction in treating inflammatory exudation in the pelvis. This includes all cases, from the simple thickening of one or both broad ligaments to complete fixation of all the organs of the pelvis, with a thick unyielding exudate matting everything together. All acute inflammation, except secondary points arising from the irritation of already hardened exudate, should have disappeared in these cases before treatment is instituted.

I speak advisedly, after a long experience with a large number of such cases, when I say that I do not believe that there is a case of the kind described which, if submitted to a persistent course of applications of strong doses of galvanism in the proper manner, cannot be cured. The exudate will gradually but perceptibly disappear, the pain from pressure upon nerve fibres and nerve points will rapidly diminish, sympathetic disturbances will be relieved, displacements caused by contracting bands will gradually give way, and the general mobility of the pelvic organs will return, while coincidently the general health is restored from the effect of the electricity on the general system.

The best results are obtained in these cases from comparatively strong doses of from 75 to 125 milliampères. The object must be, in applying the electrodes, to include between them, as far as possible, the area of greatest disease. This, occasionally, will admit the use of an intra-uterine electrode as the internal point of departure. When an intra-uterine electrode is employed, one of as large surface as practicable should be selected, to avoid undue concentration and cauterization, which would give rise to subsequent cicatricial contraction. In the majority of these cases, however, an intra-uterine electrode is not admissible because of the position of

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the exudate. In such cases it is necessary to employ a vaginal electrode so constructed that a thorough diffusion of the current is obtained, in order not to cauterize the mucous membrane of the vagina. For that purpose I employ an electrode composed of a slightly curved, insulated staff terminating in an exposed metal ball which is thickly covered with absorbent cotton moistened with water. By this simple instrument I can select any particular portion of the vagina required, with a soft yielding contact surface and thorough diffusion. The cotton is applied to the instrument by folding a thick piece over the metal bulb, and fastening it around the staff at its point of attachment with the metal by means of a small rubber band.

This instrument can be inserted with or without a speculum—more easily without, with the patient upon her back and the hips drawn near the edge of the bed or table. If a speculum is used, it should, of course, be withdrawn before the treatment is commenced. When the internal electrode is in place, it should be attached to the negative pole of the battery. Having previously adjusted the external abdominal electrode and attached it to the positive pole, the current should be gradually turned on, employing every precaution to prevent the slightest break or shock, until a strength of from 75 to 125 milliampères has been reached, the maximum strength tolerated varying between these figures with the varying sensibility of patients. The sitting should last from five to eight minutes, when the current should be gradually reduced to zero and the instrument removed. The treatment should be given every second day. The staff of the electrode is easily unloaded of its cotton by means of the dressing forceps, thus making it possible to observe perfect cleanliness. Cleansing the staff thoroughly, and the use of a fresh covering and fastening each time, of course, being imperative.

This treatment persistently carried out will accomplish exactly what I claim for it. It will not only absorb the slight exudations which merely produce thickening of the vaginal vault, but it will cause the rapid disappearance of large, well-defined masses situated in the broad ligaments or in Douglas's cul-de-sac. It will cause ovaries, large and tender from the irritation of inflammatory products, to assume their normal condition by removing the cause of the trouble. It will cause the disappearance of strong bands of adhesion, no matter where situated.

It has long been known that *mild* currents, persisted in for a long time, would slowly cause disappearance of superficial exudates, but it hardly held its own with the old treatment of iodine applications and the glycerin plug, owing to the time and cumbersome apparatus required. But a cumbersome apparatus *alone* is no longer a sufficient excuse to justify us in ignoring the rapid and complete results obtained with *strong* doses, and the other advantages offered by Apostoli's instruments of precision.

I am aware that many assertions of a fact do not carry the weight of a recitation of a series of well-authenticated cases possessing evidences of conscientious reporting and of independent verification. I can only say in self-defence, that I have a series of just such cases in preparation for publication, in which the diagnosis and, afterward, the results were verified in almost every instance by eminent gynecologists.

My experience in the treatment of fibroid growths of the uterus by electricity amounts, in round numbers, to two hundred cases. In that number of cases, not more than five failed to continue the treatment until results could be estimated. Of those who continued treatment and made a fair test of its value, up to the present time but three have failed to obtain relief. One of these was a large, soft, spongy, rapidly growing subperitoneal growth, with a suspicion of malignancy, in a patient who was so sensitive to the treatment as to be unable to receive a satisfactory dose. The second was a marked hæmorrhagic case of a submucous variety, composed of many centres of development, which repeatedly discharged itself in small masses from the uterine canal, until finally the patient became discouraged and ceased treatment. The third case which I have been unable to influence favorably is one of a large, regular subperitoneal variety, which I have persistently labored with by means of the vaginal galvano-puncture with remarkably strong doses. I am unable to account for the stubbornness exhibited in this latter case, and shall recommend surgical interference.

I am fortunate, considering the great number and variety of cases treated, to be able to record no deaths; my results, on the whole, have been exceedingly gratifying. About eighty-four per cent. are symptomatically cured, with an additional per cent. of actual cures. About fifteen cases are still under treatment.

My methods, except in unimportant minor details, are in direct imitation of my friend and master, Apostoli.

There were two varieties of cases that gave me a great deal of perplexity in my earlier work, because I could not find their counterpart in Apostoli's publications. The first was a large interstitial variety of fibroid with a marked hæmorrhagic tendency, in which the patient would not tolerate a strong dose. In these cases the uterine canal is of great depth, and the hæmorrhagic surface of necessity very extensive. In order to check hæmorrhage in such a case, a strong dose is imperative, unless some means

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of concentration is employed. Of course, if the ordinary platinum sound electrode is employed, of sufficient diameter and length to cover the whole internal surface of the uterine canal, a current of enormous strength must be employed to get sufficient concentration at any given point to cause coagulation and change of tissue, so as to check hæmorrhage In other words, a certain intensity is required, and the intensity is in direct proportion to the strength of the current and in inverse proportion to the area of the electrode. As it was impracticable to employ a dose of more than from 100 to 200 milliampères in many cases, on account of peculiar sensitiveness, I devised a means of internal concentration, or of limiting the area of the electrode.

A series of experiments, which I have already mentioned in an article read three years ago at the International Congress, proved that a current of twenty-five milliampères was necessary on an average for each square centimetre of internal surface, exclusive of the positive platinum electrode, in order to accomplish coagulation sufficient to check hæmorrhage. Upon that basis I constructed electrodes with a surface of four square centimetres, by means of which definite results were assured, and with which it was unnecessary to employ more than 100 milliampères current, different portions of the canal being treated in turn, at successive applications, until in time all have been covered. These electrodes are easily cleansed by means of a nail-brush and are constructed so that they will not be injured by strong antiseptics. Their flexibility alone is a great recommendation.

The other class of cases fortunately comprises but a small per cent. of all. They are distinguished by great sensitiveness and profuse hæmorrhage at the menstrual period. They tolerate but a small current and are even severely prostrated by the small dose they are able to bear. These cases, of course, cannot be expected to improve unless they are enabled to take a decided dose, and the nervous prostration is so severe when such a dose is forced upon them that it renders the treatment intolerable. A marked hysterical element is often present in these cases. The subsequent prostration is produced no doubt by strong reflex disturbances. I have found that they are readily improved if means are adopted by which powerful doses can be administered at not too frequent intervals, and at the patient's room where she need not be disturbed for six hours following treatment. I, therefore, get the dimensions of the uterine canal, and an electrode is constructed to fit it. I estimate its surface area in square centimetres, and estimate the strength of the current at twenty-five milliampères per centimetre that will be required at each sitting. I then order the patient to repair to her bed one hour before treatment, and to take a full dose of morphine and atropine. If I find, upon turning on the current, the patient will not tolerate the dose required, I ask an assistant to saturate a handkerchief with chloroform and give the patient just sufficient to enable me to attain my object. When that has been reached, the chloroform can be withdrawn, the patient usually being able to stand the electricity after it has once reached its maximum strength. The current is then allowed to operate for ten minutes at the full strength required, when it is gradually withdrawn, and the patient instructed to remain quiet for at least six hours.

If it is not deemed prudent to give the opiate, chloroform alone, of course, can be employed; but I employ the opiate because, as a rule, the patient requires nothing more.

By this method I have repeatedly given doses varying in strength from 200 to 400 milliampères, and prostration seldom follows. The dose is repeated in from six to ten days.

THE TREATMENT OF CHRONIC METRITIS WITH GALVANO-CHEMICAL CAUTERIZATION.[1]

BY G. BETTON MASSEY, M.D.,
OF PHILADELPHIA.

IN regard to this new electrical treatment of the diseases of women, I am of the opinion that a forward movement of vast importance has been initiated. So positive and striking is this progress that a degeneration into a fad is to be feared; but the fear of this should not blind us to important facts. During the last few years electrical science has itself been revolutionized, and it would be strange indeed if our better knowledge of it did not lead to the better application of this force to the medical arts.

Most authors have referred but little to one class of conditions in which I regard the galvanic current as possessed of an unique value. I allude to chronic inflammation of the uterus or of the endometrium. Theoretically, nothing could be better. In a convenient, clean, and controllable form we have an agent that will act as an alterative to the diseased membrane, and at the same time reduce interstitial hypertrophy by promoting both absorption and contraction. What other remedy promises as much?

In practice I have found that facts coincide very closely with this theory. I will give several brief illustrations:

A young married woman had been ill two and a half years, dating from a miscarriage. The symptoms were those of a chronic metritis with copious

[1] Read before the New York Academy of Medicine, Section in Obstetrics and Gynecology, November 27, 1889.

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leucorrhœa from a capacious cavity three inches in depth. Fifty milliampères negative were applied intra-uterine for three minutes. Three days later she was better than for many months. After a second application the cavity decreased to the normal depth, and after a third she was completely cured.

Another case was that of a lady, aged thirty-one, who had been suffering from leucorrhœa and pain since a miscarriage, two years before. Examination showed a slightly lacerated os and a hypertrophied uterus pouring forth an abundant purulent discharge from a three-inch cavity. Two intra-uterine negative and one positive cauterization were given with a current of fifty milliampères, resulting in a prompt and complete cure.

Another case presented symptoms of both chronic metritis and parametritis. This woman was seen at the Howard Hospital Clinic in September last, with the ordinary symptoms of chronic metritis dating back three years to a miscarriage. The uterus was enlarged and indurated with a three and a half inch cavity and a peculiar hypertrophy of the anterior lip. There were also decided fixation and tenderness on the right. She was given four intra-uterine cauterizations varying in strength from fifteen to forty milliampères. The result was a reduction of the cavity to two and a half inches plus, and the complete disappearance of a host of annoying symptoms.

In simple endometritis or uterine catarrh, galvanic currents locally applied are practically infallible. I have never seen a case resist them. The current strength need not exceed ten to thirty-five milliampères, using the bare intra-uterine electrode and an external indifferent pole of proper size. The choice of pole is governed by the presence or absence of menorrhagia, the positive pole being always used with this complication. When the endometritis is associated with slight cervical lacerations, it will usually be found unnecessary to perform the operation for repair, as all symptoms disappear under this treatment, leaving the patient practically well, even though a slight irregularity in the cervix remains.

REMARKS UPON THE USE OF ELECTRICITY IN THE TREATMENT OF FIBROID TUMORS OF THE UTERUS.[1]

BY ALEXANDER J. C. SKENE, M.D.,
OF BROOKLYN, NEW YORK.

IN estimating the value of electricity in the treatment of fibromata I have, of necessity, been guided by the opinions of others more than by my own observations. Owing to the extremely conflicting testimony of those who have expressed themselves, it has been very difficult to get at anything definite.

One class of men has condemned this treatment without mercy. Another class has obtained the most perfect results—all that could be desired, in fact—and still another class has had an intermediate experience. They have been able to relieve their patients of most or all of their symptoms, and have diminished the size of the tumors or retarded their growth.

I have accepted the testimony of this latter class of witnesses because it apparently contained the most truth, and also because it agreed with what little experience I have had in my own practice. More than that, I have observed that those who avoid the extremes of praise and condemnation are gaining in numbers.

Time will not permit a full review of the arguments employed by those who are opposed to this treatment of fibromata, but it may be said that the strongest opponents are those who know least about electro-physics and the therapeutic use of electricity. They have not thoroughly tried it in practice, but have theorized about it and insisted that from the nature of electricity it could not affect neoplasms, forgetting that, in this, electricity is like many other therapeutic agents which produce most valuable effects, while we do not know how such effects are produced.

It has also been claimed that this agent is dangerous, but that has been fully met by the fact that all the benefit can be obtained without taking the risks that were at one time supposed to be unavoidable.

Scoffing and ridicule have been indulged in by a few, but they are signs of weakness in those who indulge in such methods of wrestling with questions in science, and may be passed without notice.

Perhaps the most important question in the whole discussion is the relative merits of this and other methods of treatment. The claims of hysterectomy and the removal of the ovaries for fibromata have been urged with great vigor by those who are strongly addicted to surgery. There is, however, no evidence that this kind of surgery is safer or surer in its results than electricity.

By a curious misuse of facts, it has been made to appear that surgical treatment has advantages which it does not possess. Many cases are reported cured when they are simply relieved from the immediate effects of the fibroma and when, in fact, they are in worse health than before the operation.

I have tried to get records to show that more cases have died from removal of the uterus and ovaries for the cure of fibromata than have died from fibromata without treatment of any kind. If such are the facts—and I believe that the records of New

[1] Read before the New York Academy of Medicine, Section in Obstetrics and Gynecology, November 27, 1889.

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York and Brooklyn would show them to be—surely surgery does not compare favorably with electro-therapeutics.

Add to this the cases that suffer ill-health after losing the ovaries and uterus, and the records of surgical treatment are not very largely in the interest of patients, though they may be in the interest of surgeons.

Certainly, the claims of electro-therapeutics are too well sustained to be put aside by any adverse arguments which have been advanced. In fact, the record of the treatment of uterine fibromata by electricity is remarkably good considering the short time that it has been properly used, and this leads to the hope that when it is better understood and more wisely employed it will gain more confidence.

Up to the present time it has, in its immature state, been competing with surgery, which has had the advantages of being perfected by long experience.

Great progress has been made within a short time. In a recent discussion in the Academy of Medicine of Paris it was shown that strong currents are not necessary; neither is it necessary to puncture the tumor in order to get good results. This enables us to avoid all dangers, hence is a great improvement in the art.

The science of electro-therapeutics has also been advanced greatly by the discovery of the action of the electric current upon tissue, as demonstrated by Dr. Buckmaster and confirmed by Dr. Van Cott, a demonstration which ought to silence all who have argued that such effects were impossible.

MEDICAL PROGRESS.

The Nutritive Value of Boiled Milk.—That the sterilization of milk, however important, is not without its disadvantages, has been shown by Randnitz and others (MEDICAL NEWS, November 30, 1889). To determine the comparative assimilability of proteids and fats from boiled and non-boiled milk, DR. EVSEVY V. VASILIEFF, of St. Petersburg (*St. Petersburg Inaugural Dissertation*, 1889, No. 33, p. 35), has undertaken a course of most careful experiments on six healthy young men, aged from eighteen to twenty-three years. Each experiment lasted six days, during three of which the men received raw milk, and during the other three boiled milk, the daily amount of the article in either case varying between 1850 and 4200 cubic centimetres. The following are the conclusions deduced by the author from his very instructive researches;

1. The assimilation of nitrogenous ingredients from boiled milk is invariably less than that from the raw article. In the case of raw milk the average percentage of non-assimilated nitrogen amounts only to 7.05, the maximum to 7.62, and the minimum to 6.42; while in the case of boiled milk the respective figures are 8.18, 8.79, 7.76.

2. The same holds true with regard to the assimilation of fats. When fat is ingested in a raw state, the average percentage of non-assimilated fatty acids is 3.89, the maximum 4.85, and the minimum 2.88. In the case of boiled milk, however, the figures rise to 6.01, 6.99, and 4.53 respectively.

3. Boiling seems to affect especially the assimilation of the fats of milk, since the percentage of fatty acids in relation to the total quantity of dried fæces in those fed on boiled milk is considerably larger than in those fed on non-boiled milk. In the former case, fatty acids constitute 19.03 per cent. of the total amount of dry fæces; but in the latter, not more than 16.81. In other words, when a person ingests his milk boiled, every 100 grammes of his dry fæces contain a surplus of fats amounting to 2.22 grammes.

4. Therefore, as regards its nutritiousness, boiled milk represents a decidedly inferior dietetic article, compared with raw milk.

6. As far as proteids are concerned, the difference in their assimilation may find some explanation in Dr. I. Schmidt's researches (*Moscow Inaugural Dissertation*, 1882), according to which, under the influence of boiling, cow's milk undergoes important chemical changes, nearly all the albumen and a part of the casein being transformed into hemialbumose. Schmidt's analysis proves that raw cow's milk contains 8.55 per cent. of casein, 8.4 of albumen, and 6.1 of hemialbumose. Under the influence of ten minutes' boiling, the proportion of casein sinks to 7.59 per cent., that of albumen to 0.7, while that of hemialbumose rises to 23.4.—*Provincial Medical Journal*, January, 1890.

Local Application for Pharyngitis.—The following prescription for acute pharyngitis is published in the *Revue de Thérapeutique*, January 1, 1890:

℞.—Sodium borate, Sodium chlorate, of each . . . 30 grains.
Glycerin . . . . . 2 drachms.
Honey . . . . . 6 " —M.

To be applied with a camel's hair brush.

Menthol in the Vomiting of Pregnancy.—DR. WEISS advises the administration of menthol in the vomiting of pregnancy, a drug which was first recommended for this condition by Gottschalk. The following is the formula used by Weiss:

℞.—Menthol . . . . . 15 grains.
Alcohol . . . . . 5 fluid drachms.
Syrup . . . . . 1 fluid ounce.—M.

One teaspoonful to be given every hour.—*Therapeutische Monatshefte*, January, 1890.

Intravenous Injections of Quinine in Malaria.—BACELLI advocates the use of intravenous injections of quinine in the pernicious forms of malarial poisoning. The solution he employs consists of:

℞.—Quinia hydrochlorate . . 15 grains.
Sodium chloride . . . 1½ "
Distilled water . . . 154 minims.

Before using the solution on patients, he experimented with animals and satisfied himself that there was no danger to be apprehended from the method. With patients suffering from the severe malarial fevers the results, he

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claims, are brilliant. To secure an absolute curative effect, 15 grains of the quinine salt were necessary, though smaller doses proved beneficial. In some cases, Bacelli is confident that he has saved life by the prompt employment of this method of treatment.—*Centralblatt f. d. gesammte Therapie*, January, 1890.

Paraldehyde in the Treatment of Tetanus.—In the Moscow *Meditzinskoïe Obozrenië*, No. 21, 1889, DR. VARNAVA E. IGNATIEFF, house physician to the Jauzsky Hospital for Laborers, Moscow, reports two exceedingly severe cases of tetanus cured by paraldehyde. The first case is that of a peasant girl, aged fourteen years, who was admitted on the fourth day of the disease. For the first ten days (from the fourth to the fifteenth day of symptoms) she was treated with chloral, one drachm daily. The patient's state steadily growing from bad to worse, paraldehyde was resorted to. Marked improvement began almost immediately. About the thirty-third day of the disease, general spasms ceased altogether. About the thirty-ninth, trismus disappeared. On the forty-fifth, the girl got up, being practically well. On the sixty-eighth, she was discharged in a most satisfactory state. The drug was given both by the stomach and rectum, the total daily dose varying from one to two and a half drachms. In all, the patient took twenty-five and a half drachms in nineteen days, an average of eighty grains a day. The history of the second case is much the same, the woman being discharged perfectly well on the forty-third day after the commencement of the disease.—*Provincial Medical Journal*, January, 1890.

The Treatment of Anal Eczema.—It is a well-known fact that eczema about the anus and genitals of both sexes frequently resists all the well-known remedies that speedily cure the same affection on other portions of the skin. According to UNNA (*Monatshefte f. praktische Dermatologie*, No. 9, 1889), this obstinacy to treatment is attributable in part to the proximity of the disease to a mucous surface and its irritating discharges; in part to its rich supply of nerves, rendering itching so pronounced a symptom that scratching and its effects make most of the remedial applications useless; finally, because of the difficulty in applying remedies to this region.

The majority of such cases may be cured by the application of well-adapted bandages to which lotions or ointments have been applied, by cauterization with carbolic acid or corrosive sublimate, the use of cocaine, or especially with fomentations of very hot water.

When, in spite of all these remedies, the eczema becomes aggravated, the skin assuming, through the growth of connective tissue and epithelial proliferation, a cicatricial and warty appearance, the itching becomes unendurable, and the patient, from loss of sleep, physically and morally weakened, one should not hesitate to resort to local or general anæsthesia, and with a broad Paquelin cautery slowly burn the affected parts, so that, were the proper remedies not applied immediately, a burn of the second degree would result.

Before the anæsthesia is over, apply either a five per cent. solution of borax, with or without the addition of cocaine, Carron-oil to which two per cent. of carbolic acid is added, or a two per cent. resorcin solution. The following formula is especially useful:

℞.—Linseed oil Lime water Oxide of zinc Chalk	.	of each 5 parts.
Iodoform	. . . . .	1 to 2 parts.—M.

By means of the before-described treatment one can frequently, in fourteen days, cure an eczema of months' or years' duration.—*Journal of Cutaneous and Genito-urinary Diseases*, January, 1890.

Massage of the Eyes.—PFALZ, in the *Deutsche medizinische Wochenschrift*, recommends ocular massage as a valuable method of treatment in various diseased conditions of the eyes. He employs it by applying to the surface of the eyelid a salve, the nature of which will vary with the disease, and then rubs the eyeball in a radiating or circular direction. The physiological action of massage consists in stimulation of the circulation, in the absorption of pathological products, in irritation of the nerves, and in the freeing of the nerves from the compression exercised upon them by the pressure of pathological products. Massage is especially adapted to those parts of the eye which are directly accessible, but the iris and ciliary body can also be influenced by it. Corneal opacities, the remnants of previous inflammations, are especially amenable to this method of treatment. Also parenchymatous keratitis, but only in the later stage. It is also applicable in cases of chronic pustular conjunctival affections, vernal catarrh, dry catarrh, chronic iritis, and blepharitis marginalis.—*Archives of Ophthalmology*, December, 1889.

Trichinæ in Swine.—PROFESSOR E. L. MARK has recently published the results of the examination of 3064 hogs raised in the vicinity of Boston, Massachusetts (*Report of Massachusetts State Board of Health*). The examination extended over the five years, 1883 to 1888. The results show that 14.07 per cent. of the males and 10.61 of the females were infected with trichinæ. Similar examinations of Western hogs have shown only from two to three per cent. to be infected. Professor Mark reaches the conclusion that this difference is probably due to the character of the food given to those raised in the vicinity of Boston and presumably in the vicinity of other large cities. Of the fifty-six raisers of the hogs examined by him, fifty-one fed city offal. The source of the infection he believes to be in the uncooked meat found in kitchen garbage. It would be interesting to know the condition, in this respect, of the large number of hogs fed upon this food in and about the other large cities.—*Brooklyn Medical Journal*, January, 1890.

Insanity from Traumatism.—DR. CHRISTIAN, physician to the Charenton Asylum, discusses in *Archives de Neurologie*, July and September, 1889, the relations between injuries to the head and insanity. He comes to the conclusion, not only that insanity may be the immediate result of fractures of the skull and concussion of the brain, but that it may follow as a consequence of injuries to the head received many years before its outbreak, from which recovery has been, apparently, perfect. Considering the frequency of such accidents, especially in the earlier years of life, the proof he furnishes of the latter proposition does not seem to be altogether com-

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plete, although, probably, no one will deny the possibility of such cases.—*American Journal of Insanity*, January, 1890.

Jaundice during Pregnancy.—In a paper upon "Jaundice during Pregnancy," in the *American Journal of Obstetrics*, January, 1890, DR. JOHN T. WINTER concludes that every case of jaundice occurring in pregnancy should be looked upon as serious, jeopardizing both mother and child. It would seem probable that a simple catarrhal jaundice occurring from exposure to cold, from indigestion, from pressure, etc., is changed for some reason into a disease of more malignant character, terminating not infrequently in abortion, coma and convulsions, and proving fatal in a majority of instances to both mother and child.

The death of the fœtus and its expulsion should not surprise us, when we remember that the only source from which it can obtain sustenance is loaded with poisonous elements; and, as the death of the mother rarely occurs until several hours after the expulsion of the fœtus, there seem good grounds for believing that her death is due in many instances to shock, caused by labor, on a system already reduced by impaired nutrition and impoverished blood.

Intubation versus Tracheotomy.—PROFESSOR RANKE, in the *Internat. klin. Rundschau*, November 10, 1889, compares intubation and tracheotomy in the treatment of diphtheritic stenosis of the larynx thus:

1. Intubation is successful in many cases, and is a decided addition to our methods of treatment.

2. Tracheotomy will never be entirely superseded by intubation.

3. The methods are in no sense rivals, but are supplementary to each other.

4. As a rule, intubation should be first attempted, and tracheotomy be resorted to if the former is unsuccessful.

Paste for the Relief of Toothache.—

℞.—Arsenious acid, Hydrochlor. of cocaine } of each 15 grains.
Menthol . . . . . 3 "
Glycerin sufficient quantity to make a paste.—M.

A small portion of this is to be packed into the cavity. —*Revue de Thérapeutique*, December 1, 1889.

A Case of Multiple Neuritis due to Arsenical Poisoning.—DR. MCPHEDRAN publishes the following case, which is clearly one of arsenical neuritis, in the *Canadian Practitioner*, January, 1890:

T. S., aged fifty-eight; English; no occupation; personal and family history contain nothing of importance.

In April, 1889, he noticed a hard swelling on the left side of the neck behind the angle of the jaw. It grew rapidly. In May he went to a so-called "cancer doctor," who applied a plaster, leaving it on for two days, then a poultice for two more days, and so on alternately for about two weeks. The plaster caused great pain, the poultice less. Before the completion of this treatment he noticed that his legs were becoming stiff and numb, and that painful sensations occurred in them. He was soon unable to walk. The hands became affected shortly after the feet, though less severely.

He entered the Toronto General Hospital, under Dr. McPhedran's care, June 29, 1889. He presented the appearance of a quiet, temperate man. His legs and feet were almost completely paralyzed, greatly wasted, and the muscles very flabby; the skin deeply pigmented and dry, with some fine desquamation; free scaling on soles of feet. Anæsthesia of the legs was distinct, though they were sensitive to certain impressions, as, *e.g.*, drawing the finger-nail quickly along the sole of the foot. Cold was readily perceived; but heat was not felt, except when great, and then gave the impression of cold. Knee-jerk was absent, as were also all the reflexes, both superficial and deep. Without the aid of sight he was unconscious of the position of the legs. There was great pain in them, especially at night, an anodyne being required to enable him to sleep.

The hands were similarly affected, but to a much less degree. Owing to the anæsthesia and paresis, he had been unable to feed himself for some days.

To the faradic current there was no response in the forearms, hands, legs, or feet; a strong current gave a weak contraction in the arms and thighs.

There were no bowel or bladder symptoms. He said that he had had no rash of any kind.

Potassic iodide was given and the bowels kept freely open by salines. He began to improve by the 1st of August, and toward the end of September was able to stand alone for a minute or two. He has steadily improved since then, and is now able to walk a short distance. On account of the anæsthesia, which is still considerable, he cannot stand or walk with the eyes shut. The muscles have become quite large and firm, and the pigmentation has disappeared; the skin is fairly soft and moist. The reflexes are still wanting. To use his own words, he feels as if the tendo Achillis and the flexors of the fingers were too short, and should be let out a notch or two. This, is probably due to the greater weakness of the extensors as compared with the flexors, a condition easily shown to be present by testing the strength of the two.

Faradic irritability is completely restored in the forearms and hands, but is still absent in the legs and feet.

As to the cause of the paralysis in this case, there can be no doubt; nevertheless it is to be regretted that the urine was not examined for the presence of arsenic. Alcoholic neuritis is excluded by the absence of a history of intemperance, nor is there a history of rheumatism or exposure.

Prescription for Cystitis.—To render the urine aseptic in cystitis and gonorrhœa, the following is recommended in the *Gazette de Gynécologie*, December 1, 1889:

℞.—Sodium borate . . . . 1 part.
Syrup of raspberry . . . 3 parts.
Infusion of lactucarium, Infusion of linden flowers } of each 8 " —M.

One tablespoonful every two hours.

or

℞.—Benzoic acid . . . . 1 to 2 parts.
Glycerin . . . . . 5 parts.
Simple elixir . . . . 75 " —M.

One tablespoonful every two hours.

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SATURDAY, JANUARY 25, 1890.

THE TREATMENT OF CHLOROSIS.

A CONVICTION, long growing, is now mature, that the treatment of chlorosis has been, hitherto, too direct. Paradoxical as it may seem, this error is the natural consequence of exact methods of diagnosis, and adds another link to the long chain of evidence that personal experience, based upon clinical observation, can never be eliminated from successful medical practice.

It was no sooner proved that the essential pathological element of chlorosis was a deficit of iron in the blood, than it was assumed that the control of this affection was absolutely in the hands of the physician. The diagnosis once made, the treatment followed as a matter of course, and was applied to the disease without any regard whatever to the individual.

The success which attended this line of treatment, while undeniably great, fell far short of the expectations of its most ardent advocates. Cases of chlorosis were now and then encountered which were heroic in their refusal to assimilate iron. Something was evidently wrong, and the fault was supposed to be either in the preparation employed, or in its dose. Some held with Trousseau that the best results were to be obtained with insoluble preparations, such as iron filings, while others vaunted the efficacy of the soluble salts of the metal. By some practitioners, as much iron as existed in the blood of a healthy man would be administered in one day, while others contended that such a practice was absurd, since, in health, only minute quantities were absorbed with the ingested food. In a word, the attention of physicians was almost exclusively centred upon the medicinal treatment of chlorosis, the hygienic management of this disorder of nutrition being, as a rule, altogether overlooked.

These remarks have been suggested by the report of a number of well-marked cases of chlorosis successfully treated by enemata of defibrinated blood. M. Antiq (*Lyon Médicale*, No. 44, 1889), the originator of this method, claims remarkable success from its employment, and believes that it fulfils, more successfully than any other, the three indications in the treatment of chlorosis, namely: 1. Restoration of iron. 2. Restoration of oxygen. 3. Restoration of the salts of potash and of the chlorides.

With no intention of discrediting these observations, we venture the prediction that this somewhat *outré* method of treatment will be found of limited application, for, like the ordinary mode of administering iron, it is, so to speak, too direct.

The greatest success in the treatment of chlorosis will be achieved by those who bear in mind that, whatever the predisposing cause of this nutritive disorder may be, its exciting cause may vary in each individual. Each case, therefore, must be treated on its own merits, or, to be precise, on its own demerits. Of general application are hygienic measures, such as outdoor exercise on foot, on horseback, sea-bathing, massage, etc. The importance of such measures is insisted on by Peter in a recent lecture on this subject.

When it is recalled that the merest trace of iron which is present in mothers' milk is sufficient to supply the wants of a rapidly growing organism, it becomes evident that the cause of chlorosis is something which interferes with the assimilation of that metal. This obstacle may be best removed by a general or indirect method of treatment, of which the details may vary in each case. Iron is found, by experience, to be necessary in all cases, but it is useless in many unless combined with the general hygienic measures to which allusion has been made.

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SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Section in Obstetrics and Gynecology.

J. E. JANVRIN, M.D., IN THE CHAIR.

Stated Meeting, November 27, 1889.

DISCUSSION ON THE USE OF ELECTRICITY IN GYNECOLOGY.

The following papers were read:

General Observations on the Use of Electricity in Gynecology, by Dr. A. D. Rockwell, of New York (page 82).

The Treatment of Certain Pelvic Tumors by Galvano-puncture and Drainage by the Vagina, and Intra-uterine Galvanization, by Dr. Augustin H. Goelet, of New York. (page 84).

The Galvanic Treatment of Uterine Fibromata, by Dr. E. L. H. McGinnis, of New York (page 88).

Notes Regarding the Treatment of Fibromata by Electricity, by Dr. A. H. Buckmaster, of Brooklyn (page 91).

The Value of Bi-polar Faradization in Gynecology, by Dr. A. Lapthorn Smith, of Montreal (page 93).

In the discussion which followed the reading of these papers:

DR. P. F. MUNDÉ, of New York, said that for a number of years he had been much interested in this subject of electrical treatment, and believed he had had ample opportunity to become acquainted with its practical working. He could speak most decidedly in favor of electricity as a therapeutical agent in gynecology, and had published his views on this subject in an elaborate article several years ago. He had seen more benefit derived from galvanism than faradism in gynecological practice. He had also found that mild currents used for a long time are, as a rule, more efficacious than strong currents employed for a short time. He used a Leclanché forty-cell battery. For ordinary purposes he used a small meter registering only twenty milliampères. He had another which registered 500 milliampères. This he had used a few days ago in treating a fibroid, and had found it faulty and untrustworthy.

With galvanism, placing the positive electrode next to the sensitive part in the pelvis, or on the abdominal wall, he had obtained excellent results in relieving the pain of chronic pelvic peritonitis. In old cases of inflammation with adhesions, with more or less pain in the ovaries and tubes, he had found that the tri-weekly administration of electricity, with the positive current internally, was a decided benefit after a few months of treatment. On the other hand, a number of patients, after several months of such treatment, had received no appreciable benefit whatever, and laparotomy had to be performed. This showed that electrical treatment was not suited to these particular cases. However, he deemed it proper in all circumstances to give patients every opportunity for possible benefit from electricity before subjecting them to a radical operation which, by whoever performed, could never be without an element of danger.

In obscure pelvic pain, due to an inflammatory deposit unrecognizable by digital examination, extending down the sciatic or crural nerves, he had seen instant relief follow the use of electricity after other treatment had failed. While he relied on electricity, and had found it of great benefit, especially in relieving pain, he thought it might be carried too far. He considered the length of time necessary to achieve satisfactory results was a great drawback to the use of electricity. If it was clear, however, that some good was being done, the time was, of course, not lost.

As to the milliampèremeter, though he had two, he was by no means satisfied that it was at all necessary, and was inclined to look upon it as a sort of plaything. When using galvanism for the relief of pain, the sensations of the patient, he thought, were a sufficient guide as to the strength of current to be employed; but when using the current in anæsthetized patients or for galvano-puncture, it was necessary to know exactly the strength.

The faradic current he had found very useful in amenorrhœa, intra-uterine faradization being employed three times a week for this purpose. He had used electricity but once in extra-uterine pregnancy, the interrupted galvanic current being the one employed. He had cured the patient, after nearly killing her by the shock. In pyosalpinx and pelvic abscess, laparotomy and drainage were certainly to be preferred to galvano-puncture. As to uterine fibroids, he had very decided views. He considered that the value of operative treatment in this class of cases was over-estimated. Out of 123 cases coming under his observation, about 50 per cent. had required no treatment whatever. 62 had required treatment, but only 8 of this number, in his opinion, had required Apostoli's method, and 4 others called for galvano-puncture. Apostoli's plan of treatment covered only the intra-uterine use of galvanism, with the clay electrode on the abdomen, the galvano-puncture being not strictly his method.

He had used the Apostoli treatment eight times in three years, and he could honestly say that while he believed it efficient for the removal of pain and the checking of hæmorrhage, and admitted that the patients felt better for its use, not a single tumor which had come under his notice had been much reduced in size. By galvano-puncture he meant puncture through the vagina, and this, in his opinion, was the ideal treatment for the cure of uterine fibro-myoma. The four cases in which he had employed it had been absolutely cured—that is, the tumors disappeared entirely, not a vestige being left. In one of the cases a single puncture gave rise to sloughing, and this sloughing itself destroyed the growth; in the others the cure was directly due to the effects of the electrical treatment. He was, therefore, a decided believer in galvano-puncture. At the same time, he believed it had its risks, and he thought it should never be employed at a physician's office.

DR. FRANKLIN H. MARTIN, of Chicago, exhibited a portable battery, and made some remarks upon the use of electricity in the treatment of certain pelvic diseases of the female (page 95).

DR. G. BETTON MASSEY, of Philadelphia, then said that Dr. Goelet's canula might itself answer as an electrode, which would have the special advantage of allowing the gas to escape through it. In speaking of the treatment of pelvic cellulitis, he said that in one case he had been using simple vaginal applications of the strength of seventy-five milliampères with very good

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results. In the use of electricity in gynecological practice he thought too much attention was paid to antiseptic washes. These were not necessary, he thought, if perfectly clean and aseptic electrodes were employed. Dr. Massey agreed with Dr. Lapthorn Smith in his explanation of the action of bi-polar faradization, but said he could not agree with him as to the use of the coarse wire as contrasted with that of the fine.

He could not agree with Dr. Mundé in his opinion of the milliampèremeter. He considered it of importance if more than five or six cells were employed. As to the sensations of the patient furnishing a guide for the strength of the current, he had seen as active a sensation caused by fifteen milliampères with the negative pole in the uterus, as resulted from 350 milliampères in other cases. In regard to the use of electricity in pyosalpinx, he had met with one instance in which the treatment for endometritis excited a flow of pus. He had reported the case to the Obstetrical Society of Philadelphia, and the patient had since then been quite well. The passing of the electrode in the direction of the left cornua of the uterus seemed to have been efficient in causing the result named.

DR. BUCKMASTER read some remarks, prepared by Dr. A. J. C. Skene, of Brooklyn, who was prevented from being present (page 99).

DR. H. J. BOLDT, of New York, after speaking of the theory of the bi-polar action of the current on the tissues, went on to say that those gentlemen who absolutely denied any value to electricity were those who had never given it an honest trial. They had no right to operate on any patient until electricity had been given a thorough test. That it would not, however, in every instance even alleviate the symptoms he thought was perfectly true. As to pyosalpinx, he thought that these cases were cured when the tubes were cut out, and not otherwise. When the tubes were distended and the uterine extremities were closed, or when the tubes were agglutinated, what could be expected from electricity? All that could be done then was to remove the tubes by laparotomy. But as long as the calibre of the tubes remained patent, it was well to try everything. Many mistakes, he said, were made in diagnosis, and he thought it was not advisable to be too enthusiastic.

DR. GOELET in closing the discussion, said he had cured at least thirteen cases by galvano-puncture, which otherwise could not have been relieved except by laparotomy—that is to say, the patients would otherwise have been mutilated; and he thought it was only right to try to cure these patients before mutilating them. By emptying the tubes and the use of the current subsequently, the tubes might be rendered patent. He thought that the pus could be first emptied, and then the removal of the cause of the accumulation of the pus effected. The resolution of the proximal end of the tube could be produced by galvanism of the endometrium, and he was very glad to hear that in this particular his experience had been confirmed by Dr. Massey in the case related. He did not think that we ought to say that the removal of the tubes was a cure of pyosalpinx. It was a mutilation, and not a cure, and in many cases, indeed, the patient's condition was more embarrassing after the operation than before.

He thought that many of the failures with electricity which Dr. Mundé said he had met with were to be attributed to the fact of his having used his currents too weak. Then, again, he thought that Dr. Mundé had made a mistake in regarding the milliampèremeter as a plaything. Many women would bear intense pain and say nothing about it, and electricity might be thus administered in dangerous doses. It was also impossible to estimate the particular resistance of the tissues in every case; and, for these reasons, the meter was always an important auxiliary.

THE CHAIRMAN asked Dr. Goelet whether his experience of intra-uterine galvanism had demonstrated to him the fact that an occluded tube had become patulous again, and was performing its function in a normal manner. He said that, of course, the fact of fecundation occurring did not imply that both tubes were functionating.

In reply, DR. GOELET said that he could only assume that complete recovery had ensued from the fact that all symptoms were completely removed, that menstruation became normal, and that there had been no reaccumulation in the affected tube.

CORRESPONDENCE.

LONDON.

The Conveyance of Infection by Medical Men; Clinical Instruction in Fever Hospitals; The Muzzling Order.

To the Editor of THE MEDICAL NEWS,

SIR: There has been a discussion in the columns of one of our leading daily newspapers during the last few weeks in regard to the conveyance of infection, chiefly scarlet fever, by medical men. The possibility of this none would deny; but that it often occurs seems more than improbable. I have made inquiries amongst some of my friends in large practice, and letters have appeared from practitioners in the *British Medical Journal* and elsewhere; and I gather that most medical men do take all reasonable precautions when attending an infectious case to prevent their carrying the infection elsewhere. There is a general consent that, if possible, the scarlet fever patient should be visited at the end of the day's round, or, when that is not possible, at the end of a round; and that a doctor who has any midwifery cases on hand should not attend scarlet fever cases, and *vice versa*. Of course, in country districts it is not always possible for a man to hand over his patients to a professional brother. All the writers are agreed that on entering the room in which the patient is, the doctor should put on a waterproof or alpaca cloak, or one of some smooth material, which he is to take off on leaving the room and leave at the house for use at his next visit. He should handle the patient as little as possible, especially during the desquamative stage. All instruments used, such as stethoscopes, thermometers, etc., should be washed in a strong solution of carbolic acid. The doctor should wash his hands in some disinfecting solution before leaving the room, and on leaving the house should, if possible, walk home, or if too far, should drive in an open vehicle, or, at any rate, have the windows of his carriage down. On his arrival at his own house he should subject himself to a more thorough process of disinfection; and if he possesses a steam spray, he cannot do better than set it going and spray himself all over

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with carbolic acid; especial care should be taken to disinfect the hair, and even the boots should not be forgotten. One writer suggests the advisability of wearing a mackintosh cap whilst in the sick-room, and the idea seems to me a good one. The discussion was started originally by Miss Cobbe, who is well known for her undying antipathy to medical men in general and vivisectors in particular.

Curiously enough, the subject of scarlet fever has been before the public from another point of view. It has long been a standing disgrace to us in London that we had almost no provision for giving instruction to students in the diagnosis and general management of infectious cases, but at last a prospect of remedying this unfortunate state of affairs has arisen. The fever hospitals are under the control of a body known as the Metropolitan Asylums Board, and a conference is now being conducted between representatives of that Board and the College of Physicians to arrange the details of a scheme by which the fever hospitals shall be thrown open for the purposes of medical study. This is not only of great importance in itself, but also as paving the way for another much-needed reform. Within the last twenty years or so there have sprung up in various parts of London many large hospitals connected with the workhouse, and under the control of the various parishes; they contain an amount of clinical material the value of which is simply incalculable, for all cases of chronic disease amongst the poor eventually drift there; but they are not as yet available for clinical purposes. There is, however, good reason to hope that as a remote result of the present outcry for instruction in fever cases the admission of students to the infirmaries will ultimately be granted.

Your readers are possibly aware that since August we have had a muzzling order in force in London with most happy results as regards rabies and hydrophobia; but, of course, there are opponents to it, as to everything that is for the public good, and a few evenings ago a public meeting was called by the Dog Owners' Association to agitate for the repeal of the muzzle. It was a happy choice of a name when the society dubbed itself the Dog Owners' Association, for it certainly has no claim to pose before the public as doing or having done anything to befriend dogs. However, we may let that pass. The Association for the Prevention of Hydrophobia, of which Professor Horsley is one of the leading spirits, issued an appeal inviting persons to come and support an amendment that was to be proposed by Professor Horsley. When the meeting took place the room was densely filled, but it was soon evident that the conveners of the meeting would be in a decided minority; a considerable number of well-known physicians and surgeons were present, and a liberal supply of medical students. Professor Horsley made a most excellent speech, though, of course, it did not convert a single member—such a thing never does happen—but his facts were most clearly stated, and his attack on the case was, for his opponents, simply overwhelming. He concluded his speech by quoting M. Pasteur's dictum, that hydrophobia and rabies ought to be and could be completely stamped out of the British Isles by police regulations. I think after the experience of this meeting, we shall not for some little time hear much about an agitation against the muzzling order; if we do, I have no doubt that Professor Horsley will be again to the fore, and will win another signal victory.

MUNICH.

(*From our Special Correspondent.*)

To the Editor of THE MEDICAL NEWS,

SIR: Munich is more noted in medicine for her distinguished men than for her popularity as a centre for foreign students. The names of Pettenkofer, Nussbaum, Voit, Ziemssen, Winckel, Bollinger, Oertel, and Vogel make the medical faculty of her university famous. These men are held in great veneration by the people of Munich, who take pleasure in including them among the celebrities and are eloquent in praise of their public services. The present advance here in sanitary precautions, which has done so much in improving the public health, is due to Pettenkofer; and to Nussbaum the city looks with gratitude on account of his labors extending through so many years, and including such a rich dispensation of public charities.

Besides good instruction Munich offers great advantages in her clinical material. The great amount and variety of this are shown by the following list of cases in one of the daily clinics, that of November 25th, at the Frauenklinik:

Three patients with ovarian tumors, brought before the class for the purpose of instruction in diagnosis; a case of partial prolapse of the uterus; a case in which a rise of temperature without evident cause, in the fifth day after labor, presented a question for diagnosis; a case in the second stage of labor, in which the presentation of the child and the patulency of the os as labor progressed were demonstrated; and a collection of fresh specimens of fœtus immaturus and præmaturus, including specimens from the fourth to the ninth months.

It is to be remarked incidentally from this that the dangers from infection are here regarded in an optimistic light; for all the patients are brought into the clinic at once. In this clinic the instruction is individual, each student out of a limited number has a patient assigned to him; while the instructor enlarges upon the case for the benefit of the class. The gynecological department of the Frauenklinik, however, is by no means its only important feature, as the average number of confinements during the year is eight hundred.

Professor Winckel operates at this time in the year at eight in the morning, and during the summer at seven. On November 22d I saw him perform a laparotomy for a cyst of the left ovary. Both ovaries were removed, and the stumps stitched to the anterior abdominal wall, to overcome a retroflexion of the uterus. This appeared to be an extremely radical procedure, for the uterus had been displaced by the large tumor in the abdomen, and by trusting to the chance of replacing the uterus after the operation the operator could have avoided the complication arising from such forcible traction on the stumps by the abdominal wall. He performed the operation sitting before the patient in the position occupied by the operator in a lithotomy. The patient was placed on a low iron table with her legs extended on either side of the operator and supported by iron rests. By this means the operator is brought near the abdomen without the inconvenience of stooping. At the same time such

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a position makes it difficult for him to seize the ovaries when the abdominal wall is thick, or when the ovaries are held down by adhesions. This objection, however, is partly overcome by the position of the patient, which, on account of the extension of the thighs puts the anterior abdominal wall on the stretch, and brings the contents of the abdomen near the surface. The operating table offered an advantage of which we, in our appliances, are certainly destitute — that is, the means of permitting the dressing to be applied *without* lifting the patient. The part of the table beneath the small of the patient's back is hung on hinges, so that it can be let down, thus allowing a space for the bandage to be carried around the body.

To a stranger, Nussbaum's clinic is exceedingly interesting. To speak of his age and the consequences of his life of hard work as infirmities, would be a profanation. His voice, his genial manner, his power of expression warm his listeners into enthusiasm almost before they are aware of his presence. He operates every morning at eight and appears punctually on the hour, wheeled into the arena by a special porter of the hospital. He operates sitting before a low table, for he is not able to stand. I saw his clinic of November 28th, in which he operated on three cases. On November 27th he performed three operations; on the 26th a supra-pubic lithotomy; on the 25th an amputation of the breast for carcinoma with involvement of the axillary glands; on the 24th another supra-pubic lithotomy. Up to that time, since November 3d, he had performed six such operations. This shows what a great amount of work he takes upon himself to perform. He lives in the hospital, and now spends most of his time there, and is the only man of note who operates through the summer.

On November 19th I was present at one of Ziemssen's clinics. He presented a case of hernia of the lung, the second case of the kind which has appeared before his clinic since the beginning of the present semester, from congenital deformity in a man aged twenty-three years. On inspiration a part of the lung protruded beneath the skin through an opening in the thoracic wall, due to the absence of part of the third and fourth ribs on the left side. The student who was called upon for the diagnosis showed his originality in conjecture by pronouncing it to be the pectoral muscle. Ziemssen reserves half the time appointed for his clinic, whenever he has a case of interest which has terminated fatally, for the section.

I had the opportunity of seeing an autopsy on the body of a woman, from another department of the hospital, dead from septic poisoning, performed in the pathological institute. The case had been one of placenta prævia, treated by tamponing. During life the patient had suffered from phlegmasia alba dolens of the right leg, and a thrombus was thought to have formed in the crural vein with the possible result of pulmonary embolism. The diagnosis, however, was not supported by the autopsy. In spite of the dissection of the veins the section occupied only forty minutes. The brain was not removed at that time. The bladder, vagina, uterus, and rectum were removed together, and examined separately.

The section-room was a small amphitheatre furnished with stalls instead of benches, in steep tiers, so that the table was in full view of all in the room. Near the lower end of the table and upon it rested a stand high above the body, on which the organs as they were removed were examined. The assistant stood at hand with running water, from a hose, which he played over the organs. As soon as each organ was examined it was transferred to a pair of scales at the foot of the table, weighed by the assistant, and then laid aside, so that the table was always free. It is interesting to observe the difference between the German methods and our own, especially in the handling of gross pathological material. Their convenience of appliances, their thoroughness and skill are striking to the Americans who are familiar with the usual methods pursued at home.

AN EXPLANATORY NOTE.

To the Editor of THE MEDICAL NEWS,

SIR: We did not intend to take notice of the editorial entitled "A Wolf in Sheep's Clothing," on page 380, or the item headed "An Impudent Note," on page 389 of THE MEDICAL NEWS, dated October 5, 1889; but upon the urgent requests of some our professional friends we venture to say a few words to you in our defence.

We are glad to be able to say that many medical men, upon reading the above-mentioned editorial and news item, have assured us of their disbelief of the motives attributed to us in connection with the circular letters referred to. Others with whom we have had no opportunity to communicate have, after our real motives were shown them, agreed with us that our management of the advertising would result in increased business both for ourselves and the ophthalmologist as well. With many of your readers we are, of course, unable to communicate, excepting through the columns of your journal; and, while we think the treatment we have received is rather harsh, we also are sure that you will afford us an opportunity to correct any erroneous impressions which may have been formed.

There are, as you certainly know, a large proportion of the public who *will not* go to an ophthalmologist, but insist upon visiting an optician. Nothing that we can do will prevent such people following their inclinations in this particular. Now, we desire to induce such people to come to our store, and by our treatment of them let them see for themselves that it is for their best good to consult an ophthalmologist. To do this, should we refuse to fit them, or so imperfectly do so that they will have good reason to go to some other optician? Certainly not! Our plan is, by advertising to give them what they are seeking, to induce them to come to us, and when they do come, show them their needs so plainly as to make a visit to a physician as near a certainty as possible. To do this, we must not defeat our purpose by refusing to fit them, and thus send them to some optician who will endeavor to furnish them with spherical, cylindrical, prismatic, or what not, in the way of glasses; but we give them the spherical lens which will best suit their eyes, and at the same time give them the names of one or more of the reputable ophthalmologists in the city or vicinity (we refer indiscriminately to all such men with whom we are acquainted), at the same time informing them that while the glasses furnished cannot hurt them, and will no doubt give partially the assistance they require, yet they will obtain more accurate results

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if they have a careful examination made by the physician recommended. It must be borne in mind that we do not fit cylindrical or prismatic lenses, except upon a doctor's prescription furnished outside of our store.

By the above-described course we think it will be evident to you that we have, first, sold that person a pair of glasses, thus making him our customer and in a measure holding his trade in the future; second, we have indicated to him the fact that he can obtain more perfect results than we can give him; third, we have called his attention, in a perfectly proper and business-like way, to the advisability of obtaining medical services, but still leaving the matter entirely in his own hands whether he shall avail himself of such services or not.

Our house is the oldest and largest of its character in the United States, and we flatter ourselves no other can have a higher standard for knowledge and system in conducting its business, nor none a more conscientious desire to avoid small practices and mean subterfuges to attract business.

Our desire is, and always has been, to go forward hand in hand with the medical profession, in advancing their interests, improving their apparatus, at the same time lessening its cost to them; and all that we ask in return is their patronage and good will.

Yours sincerely, JAMES W. QUEEN & CO.

924 CHESTNUT STREET.

NEWS ITEMS.

Private Asylums for the Insane in New York.—The following resolution was recently passed by the New York State Commission in Lunacy:

"*Resolved*, That hereafter no license for the establishment and keeping of an asylum for the care, custody, or treatment of the insane or persons of unsound mind, for compensation or hire, shall be granted except to a duly qualified medical practitioner of recognized professional skill and standing, who is a graduate of a legally incorporated medical college, and has had actual experience in the care and treatment of the insane."

Cholera advancing toward Europe.—According to the *Lancet*, there is good reason for believing that the epidemic of cholera which has for so many months hung about the Tigris and Euphrates valleys, and the interior of Mesopotamia, has made considerable inroads into Persia. News of its having crossed the western boundary of that empire has been received from time to time, but it is now announced at the Faculty of Medicine of Paris that there has been an alarming increase of the disease in Central Persia and on the Turco-Persian frontier; and that the people are fleeing northward. Those who can afford the journey are endeavoring to reach Russian ports on the Caspian, and remembering that this is the route into Europe which cholera has so often taken before, the announcement must be regarded as one of no little gravity.

Resolutions upon the Death of Dr. James H. Hutchinson.—At a special meeting of the medical and surgical staffs of the various departments of the Pennsylvania Hospital, held January 8, 1890, the following resolutions were adopted:

"*Resolved*, That by the sudden death of Dr. James H. Hutchinson we have been deprived of a valued and beloved associate, while the Hospital has lost an able and faithful officer, the medical profession a distinguished ornament, and the community one of its best citizens.

"*Resolved*, That we hereby place upon record our high estimate of the character of our departed colleague, who, during the many years of his professional life among us, commanded our respect by his ability and sterling integrity, while his genial and kindly disposition won for him our warm friendship; he has left behind him a spotless reputation, and a memory which will be always dear to those who were privileged to know him.

"JOHN H. PACKARD, M.D.,
"Secretary of Staff."

Obituary.—DR. CHARLES MACMILLAN, Medical Referee of the Pension Bureau, a distinguished surgeon on the staff of General U. S. Grant during the War of the Rebellion, died at his home in Washington, D. C., on January 8th. Dr. Macmillan was born in Livingston County, New York, and adopted the profession of his father, who was a well-known physician. He left his private practice, and joined the volunteer corps of the United States Army as a surgeon at the first call for troops at the beginning of the Rebellion, and served throughout the War with honor. At the close of the War he returned to private life, but was recalled to the public service when General Grant was elected to the presidency, and was made American Consul at Rome. He remained at this post until after the election of President Hayes, when he began the practice of medicine in Washington.

———DR. ANTON VON TROELTSCH, of Wurtzburg, an otologist of world-wide reputation, died on January 11th. His text-book on aural surgery went through several editions in Germany, and there have been at least three editions of its English translation.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING JANUARY 18, 1890.

SCOTT, H. B., *Passed Assistant Surgeon.*—Granted extension of sick leave for one year from February 1.

WOODS, GEORGE W., *Medical Inspector.*—Detached from Mare Island Navy Yard, and ordered to the U.S.S. "Charleston."

DOERR, EZRA, *Surgeon.*—Detached from the U. S S. "Nipsic," and ordered home.

DICKINSON, DWIGHT, *Surgeon.*—Detached from Mare Island Hospital and ordered to the Navy Yard.

BALDWIN, L. B., *Passed Assistant Surgeon.*—Ordered to the U. S. S. "Michigan."

CORDEIRO, F. J. B., *Passed Assistant Surgeon.*—Detached from the Mare Island Hospital, and ordered to the U. S. S. "Nipsic."

EDGAR, J M., *Passed Assistant Surgeon.*—Detached from the U. S. S. "Michigan," and ordered to the Naval Hospital, Mare Island, California.

BAILEY, T. B., *Assistant Surgeon.*—Detached from the U.S. S. "Dale," and ordered to the U. S. S. "St. Louis."

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 14 TO JANUARY 20, 1890.

By direction of the Secretary of War, the leave of absence granted Major CALVIN DE WITT, *Surgeon*, in *S. O. 146*, December 21, 1889, Department of Dakota, is extended to include February 20, 1890.—Par. 5, *S. O.* 12, *Headquarters of the Army, A. G. O.*, January 15, 1890.

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVI. SATURDAY, FEBRUARY 1, 1890. NO 5.

ORIGINAL LECTURES.

THERAPEUTICS OF DIGITALIS.

A Lecture,
delivered at the University of Pennsylvania,

BY H. C. WOOD, M.D., LL.D.,
PROFESSOR OF THERAPEUTICS.

GENTLEMEN: In our last lecture we considered the physiological action of the drug digitalis, and found that its chief action is upon the heart and the arterial system; that it stimulates the pneumogastric nerve, and thereby slows the heart; that it also acts directly upon the heart-muscle and strengthens it; and that it further affects the vascular system so as to produce contraction of the small vessels, partly by an action on the vaso-motor centre and partly by an influence directly upon the coats of the vessels themselves.

Allow me, as is common with lecturers on heart disease, to use the term "heart dilatation" to express the condition of the heart in which its cavities are not equally enlarged but the cells are weakened and the term "cardiac hypertrophy" to express that condition in which there is or is not dilatation with an increase of the cavity of the heart and an increase in the power of the heart wall.

That condition, then, of heart disease which is especially met by digitalis is endocarditis; and you will find the greatest triumphs achieved by the drug in those cases in which there is simple dilatation or weakening of the cardiac walls. Even when the weakness of the wall is due to a fatty or other degeneration, digitalis is often of the greatest service. There is a type of disease that was commonly seen during the war among soldiers, which is closely related to heart dilatation, viz., the so-called irritable heart. This condition of the heart is seen at times in civil practice. The symptoms which it produces consist of excessive cardiac palpitation upon slightest exertion; there is continual excitability of the heart, followed, usually, but not immediately accompanied, by organic change. The organic change sometimes takes the form of hypertrophy; more frequently the "irritable heart" ends in a weak heart.

Digitalis is especially useful in most cases of disease of the heart, not only by virtue of its strengthening power, but by virtue of the peculiar action which it exerts upon the pneumogastric nerve. The so-called irritable heart of the soldier is undoubtedly the outcome of pneumogastric depression, and is most effectively met by rest and the use of digitalis.

The opposite condition to dilatation, viz., hypertrophy, is, as you can well see, aggravated rather than relieved by digitalis. In hypertrophy there is excessive muscular development, and this excessive output of muscular force is increased by the use of digitalis. Here you require remedies to depress cardiac action. The number of cases of heart disease, however, in which the walls of the heart alone are affected is comparatively few. In the great mass of cases we have valvular lesions, causing cardiac muscular lesions. It is especially in the treatment of cardiac valvular lesions that digitalis is of service.

Some persons entertain the idea that to have heart disease is to be immediately disabled. I was taught, however, by my experience with a patient very early in my practice, that cardiac disease may exist for years, the patient leading a happy and useful life. I allude to an old lady, who finally died under my care, who had been a nurse in the family of General Washington, who had been a patient of Rush, whose life had been rooted in the past century. Through all the decades, as far as I could trace her history back, she had had a severe organic disease of the mitral valves, and yet she lived to an age of somewhere in the eighties.

We are now brought directly face to face with a study of the method in which nature brings about a cure or relief in cases of cardiac valvular lesions. When the masses of coagula have altered, changed, and distorted the valve, nature has no power of repairing that valve. We have no power, medical or natural, of adding to the valve that is partially destroyed or of tearing down the valve that has been added to by the disease. All that nature can do is to increase the power of the structure. I do not know how many of you have done as I was accustomed to do in my youth when, early in the morning, I went out into the yard where the cattle were to be watered, and having an old, leaky pump, whose valves were forever dropping water, I labored to get the water up. It was necessary to make the strokes vigorously, and by and by, through the power of my arm, I overcame the loss of power in the valve. This is exactly what nature seeks to do in heart disease, viz., to increase the power of the cardiac structure until it makes up the loss from the destruction of valvular tissue. If the heart becomes so balanced that there is sufficient increase in the muscle to atone for the injury to the valve, then life goes on as usual. The difficulty, the danger, the death that is brought about finally, in most cases results from the fact that nature fails or is unable to bring about an exact compensatory hypertrophy; there is too little or too much of power in the muscle to atone exactly for the inequality in the valve; and thus, little by little, changes follow, because these two antagonistic forces are uneven. The object, therefore, in convalescence from endocarditis in every new case of heart disease is, by nursing, by rest, by proper feeding, by the aid of proper medicaments, if possible, to bring about an exact compensatory hypertrophy. And, therefore, practically, your effort is to build up heart structure; to add to, not to take away from, power. We use digitalis during the convalescence from endocarditis, to aid in bringing up and forming this compensatory hypertrophy. How it does this I shall show you a little more in detail when we come to study the therapeutics of digitalis.

The old valvular lesion is one, after all, which most

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frequently claims the attention of the physician. In the treatment of the valvular lesion of the heart, the first thing to be done is to make your therapeutic application. The scientific diagnosis in regard to valvular heart lesion is important, but it is only important in aiding you to reach a conclusion in the therapeutic action. If I had heart disease, I would not care at all whether the physician was able to say which valve was or was not affected, provided only he was able to answer this question, Is the hypertrophy in that part compensatory, is it too little or is it too much—what, in other words, is the relation in the heart that is before us between the outcome of the valve, the output, and the force which is to meet that output?

You will remember that we have two kinds of hypertrophy in heart disease. We have what you may call absolute hypertrophy, a mere absolute gain of strength, when the heart is two or three times as strong as it ought to be. But that heart which is absolutely hypertrophied may be relatively dilated or weakened.

Suppose, for instance, we have a heart the power of which is "100" while the power in the muscle is "100". That heart is a normal, healthy heart, and the blood flows in regular cadence. Valvular disease comes, and this "100" increases to "500", because the leak in the valves has required five times the amount of force to make the blood flow regularly. This "100" may rise to "300", and the heart be three times as strong as it was when normal or before the disease came; and yet the power is not equal to the demand; and you have, under these circumstances, an absolute hypertrophy but a relative dilatation. You have a heart three times as strong as normal, but a heart that is fatally weakened in regard to the amount of work necessary for the comfort and the life of the individual. The therapeutic diagnosis to be made in any individual case, the important practical diagnosis, is not whether there is absolute hypertrophy, but whether there is relative hypertrophy or relative dilatation—whether the increase in the power of the heart is or is not proportionate with the increase of the work required. Now, how do we ascertain that? You are aided a little by valvular lesion, but, after all, not materially. When the heart fails you find that the venous system is full, that there is a tendency to dropsy, that the right side of the heart is distended; that the aortic system, in other words, is comparatively empty and the venous system comparatively full. When you find this condition, you know almost to a certainty that you have a case of relative dilatation or weakness of the heart. Hence in almost all cardiac dropsies digitalis is indicated.

Let us take the individual lesions of the heart, for a moment, and consider how digitalis acts. Take a simple case for our purpose, that of mitral regurgitation. There you have a heart in which, when the ventricle contracts, the blood, instead of rushing out into the aorta, is some of it forced back into the auricle; and thus the aorta gets only a portion of what is its due. The aorta being empty, the whole arterial system is empty, and everywhere, from all portions of the body, the cry comes for more blood. The heart attempts to respond; and by and by, from perpetual irritation, the heart becomes as it were angry; it loses the power of self-control. Now, instead of the 60 or 70 strong beats a minute that you ought to have, you have a heart that is beating 120 or 130 times a minute, it may be—at all events far above the normal rate, and each beat is ineffectual. For a heart-beat to be effectual it must have a ventricle full of blood and be able to contract upon something and to throw that something into the aorta. Your little, continual, impatient beats mean continual emptiness all over the arterial system, continual cries for more blood, continual loss of potency; and so we have a weakened, cold circulation everywhere, and a circulation that grows worse and worse.

How does digitalis bring relief? It is not a rag with which you can stuff the lesion down. It is not a lever that you can put on the mitral valve. Digitalis does this: First, by virtue of its action on the inhibitory nerve and, to some extent, by virtue of its action on the heart muscle it quiets the heart. It makes the heart deaf to the impulses coming to it from all portions of the system; and, instead of 120 or 130 beats a minute, you have a pulse of 60 or 70 a minute; and during the long pauses the ventricle fills itself with blood. Now when it comes to contract, it finds that it has within its embrace a great mass of blood which can be squeezed out through the aorta. So that, in the first place, you have produced quiet in the heart, you have a heart filled with blood that may be expelled; and when the contraction comes it is a great, powerful contraction, in which has been gathered up a force that previously was wasted in many different contractions. More than this: you know very well that when you used the pump in order to atone for the leaking valve, you had to make the strokes very powerfully and quickly; and you know very well that there is friction in the small opening, which is greatly increased by the power behind the flood forcing the flood through. The aorta is wide and open and ready for blood; the little opening in the mitral valve is choked up with excrescences, is irregular and small: so that, when the powerful contraction comes, there is an immense increase of friction in the mitral valve with but little increase in the aorta and the blood chokes itself up, as it were, so that but very little blood gets up into the venous system.

You see, under these circumstances, how digitalis increases not only the amount of blood that goes out of the aorta, but increases the proportionate percentage of blood that goes out as compared with that which goes backward. I have hardly time to-day—in fact, I have not time in the hour allotted to me—to take up the individual cardiac valvular lesions and trace out the way in which digitalis does good in each individual lesion.

There is one class of valvular diseases in which, common opinion says, digitalis does harm, and that is, in aortic disease. The use of digitalis in diseases of the aortic valve is governed by the same laws which govern its use in diseases of the mitral valve. Whenever in diseases of the aortic valve the heart is weak, you use digitalis precisely as you use it in diseases of the mitral valve. But it so happens that, in cases of aortic disease, excessive hypertrophy is common, while it is very rare in cases of mirtal disease. So that if you take at random a thousand cases of cardiac disease, you will find that digitalis suits a larger percentage of mitral disease cases than of cases of aortic disease. This is not because there is any difference in the application of the

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remedy or in the rules governing it, but simply because aortic disease more frequently gives rise to excessive hypertrophy than does mitral disease.

Gentlemen, very extraordinary permanent results are sometimes seen in heart disease from the use of digitalis. I have seen a case, for instance, in which a laboring man, unable to work, whose condition in his cardiac indications was apparently hopeless, become able to work in a few days and go for some months without taking more digitalis. It would seem, therefore, in view of its effects in heart disease, that the drug does more than simply stimulate the heart, and that it ought to be classed as a cardiac tonic and food rather than a cardiac stimulant. It is very easy to see how digitalis, under these circumstances, does good. You know that when the aorta is filled and distended with blood coming from a powerful contraction, the circulation in the cardiac walls is especially affected. Now you have a heart, we will say, that is overworked from valvular disease, a heart that is unable to throw sufficient blood to feed the general system, a heart that is starving itself, because failure in circulation is felt in the heart wall more severely, even than in the periphery of the body. You have, therefore, a heart that is overworked and underfed; and you know full well that when you are overworked and under-fed, you undergo rapid exhaustion, and have need of change. I have no doubt that one cause of heart failure and valvular lesions is underfeeding of the heart wall with blood. Now, you restore that heart to a normal action temporarily by the use of digitalis, by the stimulation of digitalis, if you please; and, consequently, when the current rushes out through the aorta, there is a great mass of it to go into the veins and arteries to feed the walls. When the heart contracts with a spasm, it contracts with such force that it empties out all the juices from the muscles and makes a clear, open space for the blood to flow in and to feed the heart. And so the heart ceases from its overwork, has a rest from its excessive labor, and is also fed more liberally than it was before. The digitalis, in these cases, does good temporarily by restoring the balance of the circulation; permanently, by bringing rest and food to the heart itself.

But I believe myself that digitalis goes beyond this. The experiments of Gaskill have shown that the pneumogastric nerve is a trophic nerve of the heart; that during the period of inhibition there is not only rest from functional activity, but there is activity in structural change; that during the systole of the heart, in other words, the heart puts forth energy and destroys its own structure; that during diastole of the heart the heart not only rests from functional activity, but is engaged in building up its own structure. Systole is destructive to the heart; diastole is constructive to the heart. Now, therefore, when you have a long period of diastole, you have an increase in the structural activities of the heart. And so there comes to the heart not only cessation from worry, not only over-feeding instead of under-feeding, but also an intensely stimulated structural activity. Under these circumstances, is it wonderful that the effect of digitalis in cardiac disease is so often permanent?

You can see how, properly used, digitalis is a remedy of great value in the treatment of the formative phase, so to speak, of heart disease and in convalescence. It regulates the heart's action, it causes the muscle to be well-fed, and it stimulates activity in that muscle. Its use, therefore, is of immense importance in building up activity in the heart structure, if there is any hope for the patient.

Let me now say a few words in regard to the use of digitalis in old cases of heart disease. In the cases of heart disease of which I have been speaking and which are not very severe, especially in the early stages, I would recommend ten drops of tincture of digitalis, three times a day. But there is a class of cases in which most wonderful therapeutic results have been attained by the inordinate use, so to speak, of digitalis. I remember being called upon by an old German doctor, who asked me to take care of a lady patient during his absence. The lady lived in Cherry Street, opposite the St. Paul burying-ground. When I visited her she was sitting at a window, leaning forward, and in that horrible agony of a protracted struggle for breath which attends the last stages of heart disease. After a few formal words of introduction to the patient, I asked the physician, "Have you given digitalis?" He replied that he had. I then inquired, "Have you given massive doses?" He answered, "No." I asked, "Are you and is she willing to take the risk?" He replied substantially that it would be better for the patient to be in the graveyard, to which he pointed, than to continue to suffer as she was then suffering. The lady assented to my proposition, and I began to administer to her doses of half a drachm of tincture of digitalis, three times a day. When the doctor came back, three weeks later, the lady herself came down to the door to greet him. In another case a banker from the West, who was at one of our hotels, had become suddenly worse with an aggravation of his cardiac disease, and had been at his hotel, four or five weeks, under the care of a homœopathist. I found that man sitting up, but with the most absolute characteristics of the disease that could be conceived of. He would cease breathing for a minute or so, and then, when apparently about to die, would suddenly rise up and spasmodically catch his breath. After a long pause he would again spring up, gasping for breath. I put that man on enormous doses of digitalis, and in two weeks he was able to go to his home in St. Louis.

Now, gentlemen, remember that each of those cases was an advanced stage of cardiac disease, in which life was a misery and death a thing to be hoped for. By the use of digitalis the patients were restored, for the time being, to the power of active life. But mark you the final result. The banker, one day, fell dead across the threshold of his bank; the old woman, early one morning, fell dead upon the stall of the market where she was making her purchase.

Now, those people were not killed by digitalis. Digitalis had not produced in those people a sudden cardiac arrest. But what digitalis had done to those hearts was this: it had steadied them, stimulated them, built them up, brought them into that condition in which they were able to utilize the last grain of force that was remaining in the storehouse of their power, and to make use of that force until, at last, it was expended. When the last grain was gone, the heart stopped. Life had been prolonged, life had been made comfortable; death, when it came, came as the lightning shock.

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Therefore, whenever you have these old cases of heart disease, make up your minds that you are justified in using these enormous doses of digitalis; but remember what the probable end will be, and take care that you warn the patient and warn the friends of the patient, so that they may know what is to be expected.

There is a condition of the arterial system allied with or often coexistent with the aortic disease in which, not many years since, surgeons used digitalis. I refer to aneurism. But you see at once that digitalis is a most dangerous remedy in the treatment of aneurism. The only reason why the surgeon has failed to do harm in the use of digitalis in aneurism is that he gave it in such small doses that the drug had no effect. You take an aortic arch partially torn asunder, weakened by disease and ready to burst, and you send through that aortic arch not the little, feeble stream of failing heart-power, but the great, mighty current produced under digitalis. This force is propelled forward, and there is also a lateral force exerted of necessity, and especially is that lateral force exerted when there comes the reflex wave driven back by heart-pressure on the aortic valve, and with such force as to rebound. There is great danger that, under these circumstances, the wall will give way. The reason that that has not oftener happened is because the digitalis was given in such small doses that it probably had no effect. This is not mere theory. Some years ago, when I was a physician in Blockley Hospital, there came a man into a ward in a condition of collapse, who had been picked up in the street in a dying condition, with a temperature far below normal and a pulse which was not perceptible. I said, "I do not know what is the matter with this man; give him digitalis and other stimulants." Digitalis was administered, and I saw the man two days afterward. As I stood by his bedside I felt the great, huge digitalis wave coming up under my finger, and I said, "Give this man no more digitalis," as his pulse showed unquestionably the effect of it. Suddenly the man, with a struggle, braced himself in the bed and threw himself forward. A great rush of blood came out of his mouth and he fell back—he was dead. I said at once to the resident physician, "Do you know what we have done? That man had internal aneurism, and we have burst it with digitalis." There was the aortic artery rent as though with human fingers; the digitalis had seized upon it and torn it asunder.

In the hurry of preparation I have overlooked one or two points which I should have mentioned, and I will now give you these a little out of order, viz., as to the failure of digitalis to do good in certain cases of heart disease. First, let me say one other word in regard to the therapeutic diagnosis. I have told you how to make it. If in some cases, when exercising the utmost care, you are doubtful whether a heart is weak, whether it is dilated or whether it is strong, then you make a therapeutic test. If digitalis renders that heart more irritable and increases the distress of the patient, you know that the heart is hypertrophied. This applies also to some cases of valvular lesions, where you suspect that you have made a mistake in your therapeutic diagnosis and that the case is really one in which there is relative hypertrophy, but not, as you had thought, relative dilatation. But there are cases frequently met with in which the use of digitalis seems to be indicated, and in which it increases greatly the distress of the patient, but in which you are sure there is relative dilatation or weakness of the heart of the patient. These are cases of mitral insufficiency. Where you have a miserable cardiac dropsy and a failure everywhere in arterial circulation, give digitalis and observe the results you get from it.

In other words, digitalis seems to stimulate the ventricles more powerfully than it stimulates the auricles. Then, again, remember that the ventricle is always overpowerful when compared with the auricle in the heart. When you have a ventricular beat, you have a strong contraction, throwing the blood back upon the auricle. If, under these circumstances, you have an auricle which is very weak, and you give digitalis, the ventricle becomes excessively powerful; and when it drives the blood back upon that auricle, it drives it back with such power that the auricle is not able to react, and, instead of reacting against the ventricle, the auricle yields and the valve stretches and becomes weak. Then comes the cardiac result, which is not the outcome of a ventricular failure, but the outcome of a ventricular strain. It is under these circumstances that you have such a period of ventricular strain that the auricle gives way and you have distress.

One word in regard to the use of digitalis in cases of cardiac dropsy. You cannot rely upon digitalis as a direct stimulant to the urinary or secretive organs. When you have failure of urinary secretion, it is because there is failure of circulation in the kidneys. Under these circumstances, of course, by regulating the blood circulation the digitalis will increase the urinary secretions. The great value which it has in cardiac dropsy is by restoring everywhere the balance of the circulation.

ORIGINAL ARTICLES.

A CASE OF GASTRO-ENTEROSTOMY AFTER SENN'S METHOD FOR CANCEROUS OBSTRUCTION OF THE PYLORUS.[1]

BY M. STAMM, M.D.,
OF FREMONT, OHIO.

MRS. M., aged sixty-three years, had felt some pain in the left epigastric region since the beginning of March, 1889. On July 6th, she first came to my office and told me that for the past three weeks she had noticed a hard tumor in the region of her stomach, complaining at the same time of loss of appetite, acid eructations, loss of flesh and strength. I was struck by her appearance, as in February when I had last seen her she was a picture of perfect health and weighed about 197 pounds. Now she apparently did not weigh more than 140 pounds, and had a decided cachectic appearance. On examination, a solid nodular tumor was discovered in the epigastric region midway between the ensiform cartilage and umbilicus. The area of dulness was about the size of two hands; tumor did not appear to be movable. On July 9th, I examined her again

[1] Read before the Northwestern Ohio Medical Association at Toledo, Ohio, December 12, 1889.

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with Dr. Gessner, of Fremont. After inflation of the stomach with carbonic acid gas, the tympanitic sound reached to about two inches below the umbilicus; the tumor was not displaced, the nodules seemed to separate slightly, some taking a course along the lesser curvature. Dulness over the liver reached about two inches below the ribs. After having emptied the stomach of gas with the tube, I injected nearly three quarts of warm water into the bowels, following Naunyn's advice. The tumor disappeared from touch, but the dulness remained the same. Consequently we arrived at the diagnosis of carcinoma of the pylorus, including the lesser curvature. Patient insisted upon knowing her real condition, which we could not very well hide from her, as she had already independently formed similar conclusions. She then said she knew what the result would be, as there was no hope for a cure. As a mere consolation, we told her that in recent years surgery had taken hold of such cases and that a few had lived for several years in comfort after operation. She would not hear of an operation, especially as I told her that it was generally very dangerous and could not be lightly advised by a conscientious physician—in fact, should only be undertaken at the urgent request of the patient. At my subsequent visits she repeatedly and spontaneously referred to an operation as a thing she would never consent to, and in return I always told her that I had no desire to advise such an interference, knowing very well that on account of the immobility of the tumor a resection of the pylorus was out of question. Not a little surprised was I, therefore, when, in August, she sent me word that she was now determined to undergo an operation. In vain I explained to her and her husband the impossibility of a complete removal of the growth, that any operation would at best only give her temporary relief, and probably that but for a short time. But as symptoms of pyloric obstruction had set in, she was bound to get relief at any cost.

August 22d was decided upon for the operation. I therefore washed out her stomach on August 20th, and again on the evening previous to the operation. At her request, she was allowed to take half a cupful of black coffee about 4 o'clock in the morning, before the operation, with the intention of washing out her stomach again about six hours later. She, however, when that time came, objected so strenuously to such a step, that she was ready to give up the operation rather than submit to another lavage.

My intention was to perform either gastro-enterostomy or Bernay's operation, which latter consists in gastrstromy and scooping out the cancerous mass. Bernay's two cases which he reported in the *Annals of Surgery*, December, 1887, certainly encourage such a procedure in suitable cases, but, as will be seen, my case presented too extensive an infiltration to admit of any such measures.

The incision was made in the median line, where the stomach presented itself readily. The cancer was located in the lesser curvature, and the pylorus formed one rigid mass, being adherent to liver and pancreas. A number of nodules were also found in the liver and some in the anterior wall of the stomach. I introduced my right hand into the abdominal cavity down to the pelvis and caught up what I thought was the upper part of the ileum. Nothnagel's test, which consists in placing a grain of salt on the serous surface of the bowels to elicit ascending peristalsis, was a complete failure in my case. Consequently I followed the coil of intestine, which I held in my fingers, up for some distance until I felt the mesentery become shorter and selected the corresponding part for the opening. As a ligature for the bowels, to prevent any escape of their contents, I took two small rubber bands, passed them with the eyed end of a probe through the mesentery about four inches apart, and, after having pressed out the contents of the intervening coil, I fastened the bands with Pean's hæmostatic forceps. An incision about one and a quarter inches in length was then made upon the convex surface of the intestine, and the decalcified bone plate introduced. After having transfixed the bowel by both lateral sutures, I handed it over to one assistant, and made an incision into the stomach about the middle of the greater curvature and one inch above the insertion of the omentum. The black coffee which the patient took about seven hours before was found in undiminished quantity in the stomach and caused some delay in the operation, as it had to be emptied by means of the syringe. For the stomach I used an undecalcified bone plate, as Senn has recommended. The threads were then tied and the plates adjusted. As an uneasy feeling crept over me at the thought of returning the sutured parts into the abdominal cavity, I introduced about fifteen Lembert sutures for the purpose of reinforcement. A second case, no doubt, will make me less apprehensive, so that I may restrict myself only to a few Lembert sutures, but I think every novice in such a matter will undoubtedly share the feelings I had at the time.

Patient rallied well from the operation; not the slightest sign of collapse was shown, although she regurgitated a few mouthfuls of black coffee about four times during the first twenty-four hours. The next morning I succeeded in getting her consent to have her stomach washed out again, which was done without retching, as a few minutes before I had brushed out her pharynx with a ten per cent. solution of cocaine. This gave her complete relief, and at each of my subsequent visits she expressed herself as feeling surprisingly well. Her temperature never exceeded 100°. On the third day her bowels moved slightly, after an enema. Enemata of brandy and peptonized milk, also the yolk of an egg, were given to her the first three days; afterward she took food by the mouth. Her bowels moved every morning for five weeks. Her condition was really very satisfactory for four weeks, although her tumor kept on growing very rapidly. At the end of four weeks she began to vomit occasionally, mostly mucus, but still she took nourishment up to the end of the fifth week. After that time she lived principally on wine and water. On October 4th she died from progressive marasmus, without the least suffering or distress.

Post-mortem, on October 5th, revealed stomach,

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liver and pancreas almost totally degenerated. The anastomosed parts were slightly adherent to the abdominal incision; the artificial opening would admit the index finger very readily. The portion of the bowel which I had selected for anastomosis was the upper part of the ileum. The bone plate was found lying loose in the stomach, the decalcified plate in the bowels was no doubt absorbed, as it could not be found, and never had passed with the stools. Gall bladder contained an immense gall-stone, which, however, had not caused any symptoms.

Now we may naturally ask the question, Is gastro-enterostomy a justifiable operation for cancer of the pylorus? Is it worth while to undertake an operation of such magnitude in a case where a cure is absolutely out of the question? I might premise in saying that, in such an instance, the opinion of the highest medical authority is of little weight unless supported by clinical facts. In order to decide this question, we must first look at the rate of mortality immediately connected with the operation. Von Hacker's report from the Vienna clinic, in 1886, was certainly not very encouraging. Of 8 cases of gastro-enterostomy, after Woelfler's method, 5 died promptly, and the 3 cases which recovered enjoyed only a short improvement. But the cause of this high mortality could be easily explained by the fact that in several cases an attempt at total resection of the pylorus had preceded the gastro-enterostomy, and only when they found the adhesions too extensive did they resort to Woelfler's method. Satzmann also published a table of 23 cases of gastro-enterostomy,[1] 18 cases for cancer and 5 cases for cicatricial constriction of the pylorus. Of these 18 cases of cancer 12 died, while those which recovered lived between one and four months. It is no surprise, therefore, that these two authors did not take kindly to the operation. A much more favorable report is published by Rockwitz,[2] from the Strassburg Clinic. One case was operated upon by Fischer, on May 13, 1882. The woman, about thirty-one years old, gained seven pounds during the first four weeks, was able to do some light housework, and died one year and two months after operation. He further reports seven cases from Luecke's clinic. Of this number, 1 died about eighteen days after the operation from inanition and pneumonia. In this case the mesentery of the ileum at the seat of anastomosis produced a partial constriction of the transverse colon. The other cases lived from three months to nearly one year, greatly relieved of the distressing symptoms. Dr. Angerer, of Munich, reported 6 cases of gastro-enterostomy at the Congress of German Surgeons last spring. One case lived for months, and was able to work as a mason, though he frequently suffered from colicky pains, 2 cases died in a few weeks, and 3 a few days after the operation. Lauenstein, of Hamburg, at the same time added 9 cases, of which he lost 2 in immediate consequence of the operation, the remainder living for a longer time free from all unpleasant symptoms. Dr. Ransohoff, of Cincinnati, was kind enough to send me an extract from the London *Lancet*, vol. ii., 1889, p. 986, containing the report of a case operated on by Mr. Herbert Page, and read at the meeting of the Royal Medical and Chirurgical Society, May 14, 1889. The patient, a man aged forty-eight years, had a malignant pyloric obstruction for several months, and was operated on in St. Mary's Hospital in December, 1887, after Woelfler's method. He was much relieved by the operation, and lived for seventy-two days in comparative comfort, but did not gain in weight, which he thinks was due to the fact revealed at the autopsy that the lower portion of the ilium was used for the anastomosis. He appended a table of 38 cases furnished by different operators, 2 of which were subjected to both pylorectomy and gastro-enterostomy at the same time. Of the 36 cases of gastro-enterostomy alone, 15 were fatal directly or indirectly as the result of the operation. But he noticed a steady decline in the rate of mortality. In the first 18 cases there were 10 deaths, while in the second 18 there were 5 only. Czerny reports 11 cases from his own clinic, 5 operations after Woelfler's, and 6 after von Hacker's method, with 7 deaths. The first case in this country was the one of Ransohoff, operated on in 1884, after Woelfler's method. Patient died eight hours after operation from collapse. Another case operated on about two years ago by Lange, of New York, died thirty-one days after operation from perforation of the posterior wall of the stomach at the side of the carcinomatous ulcer. Meyer, of New York, reported a case[1] where he followed Woelfler's method with continuous catgut suture. Death followed five days after operation from ileus, which Meyer ascribes to the fact that the anastomosed portion was selected too far away from the pylorus.

In my opinion, the cases from the Strassburg clinic, and those where the advice of Rockwitz has been followed, are alone of practical value in fixing the rate of mortality for operations after Woelfler's method. Rockwitz has pointed out the necessity of confining the operation simply to those cases which are not too much reduced in strength, and in cases where the condition leaves one undecided whether to make a radical excision or resort to gastro-enterostomy, to cast the die in favor of the latter operation. The secret of Luecke's and Fischer's success undoubtedly centres in that fact. Luecke's operations lasted on an average one hour and a half, and they were generally followed by considerable

[1] Centralblatt f. Chirurgie, No. 33, 1886.

[2] Deutsche Zeitschrift f. Chirurgie, Bd. xxv., Heft 3.

[1] New York Medical Journal, June 22, 1889.

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collapse. How much better able must we be now to attain success since that indefatigable investigator and fruitful genius, Dr. Senn, has given us a method so simple and rapid of execution, that collapse and immediate death after the operation will almost reflect upon the skill and good sense of the surgeon. The use of bone plates has made gastro-enterostomy in practice a very safe method. Dr. Senn, in a recent letter to me, reports 7 cases of his own, of which number only 1 died shortly after the operation. This case really represented the most extreme limit of operative venture, as the patient was already at death's door. It was the first case the doctor had operated on, and very probably in the future such cases will be allowed to die a natural death. The rest of the cases lived for several months, free from symptoms of pyloric obstruction. Dr. Ransohoff, in a letter, gave me a history of his case which was operated on last spring after Senn's method. For three weeks everything was in the best condition, but after that time the symptoms returned, and patient died one month after operation. At the necropsy the opening was found too small to substitute the normal pylorus, and the operator ascribes this to the bone plates. He thinks he will use Abbe's catgut rings in the future. So we have 9 cases after Senn's method from three operators, with but 1 death as the immediate result of the operation, and we may assume that in the future the mortality will be reduced to almost *nil.*

The second question, "Is it worth while to undertake an operation of such magnitude in a case where a cure is absolutely out of the question?" is certainly not out of order here. It seems to be a settled fact amongst physicians, that in cases of pyloric obstruction they have hitherto been wellnigh powerless. And, I think, most physicians who have been confronted with such cases, and who have a heart for human suffering, would have been glad to bring relief even at some cost; indeed, I think most patients in this terrible condition will drive their medical attendants to desperate means. Does this operation really give the desired relief? In answer to these questions I can only quote the opinions of those surgeons who have operated. Rockwitz says:

"I have never seen a happier and more grateful set of patients than the class affected with pyloric obstruction as, after a complaint long and full of torture, they see themselves suddenly relieved from pain and other disturbances, and gain renewed vigor and courage to live."

Senn, in his work on intestinal surgery, says:

"These cases have satisfied me that gastro-enterostomy in cases of inoperable carcinomatous stenosis of the stomach is a safe and justifiable operation, and should be more frequently resorted to, as it is the only resource which promises substantial relief, prolongs life, and infuses new hope into a class of patients otherwise doomed to a certain, speedy death."

In his letters addressed to me he seems to be even more confirmed in the advisability to operate. Dr. Ransohoff says:

"In cases of carcinoma where a radical operation (pylorectomy) is not possible, I appreciate gastro-enterostomy very highly. In cases of cicatricial stenosis or round ulcer, I would prefer excision or the pyloro-plastic operations (Heinecke-Mikulicz)."

Mr. Herbert Page's opinion is that gastro-enterostomy is worthy of more attention than it has hitherto had in England. In properly selected cases it appeared to him to be an operation distinctly justifiable, and one to be recommended, for it was capable of bringing relief from the distressing symptoms incidental to pyloric obstruction, and was thereby the means, in all probability, of prolonging life.

If one case justifies me in forming an opinion, I can say that the operation in my case prolonged life probably from three to four weeks, that for nearly five weeks the patient was cheerful, and not even without hopes. From the time of operation up to her death she was free from pain and distress of any kind. Considering the extent of cancerous infiltration, she really did as well as could be expected. Moreover, shortly before the operation, she said her only wish was to live long enough to see her daughter safely through her approaching confinement, and that she would like to see the baby; her wish was gratified in its full measure. I, therefore, am fully in favor of this operation, provided we explain to the family the exact condition, and do not promise more than we can realize.

Another question arises, "Should gastro-enterostomy be performed in every case of carcinoma of the pylorus, or should some cases be reserved for pylorectomy?" I think most surgeons now agree to advise excision of the pylorus only in cases where the tumor is movable and the adhesions can easily be separated; in doubtful cases gastro-enterostomy will prove to be the safest method. In regard to operations for the relief of cicatricial stenosis or round ulcer of the pylorus, we suffer from an *embarras de richesse.* Some surgeons are especially partial to Loreta's operation, others to radical excision, some to Heinecke-Mikulicz's method, others again to gastro-enterostomy. All of them have been tried, some with success and some with failures. I think Loreta's operation may be indicated in cases of tonic contraction of the sphincter, or slight, resistless cicatricial stricture. Excision, in my opinion, should be condemned, as to-day we have safer methods. Kroenlein's case, at least, should serve as a warning.[1] He operated for traumatic

[1] Centralblatt f Chirurgie, No. 40, 1888.

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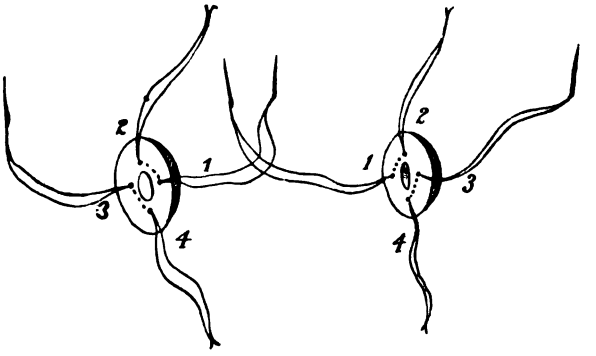
cicatricial stenosis, and found the pylorus adherent to the liver. After making the excision, he found that the transverse cut of the duodenum would only admit a fine probe; it was impossible to extend the resection further down; Kroenlein, therefore, closed the duodenal end with a number of sutures, and inserted the gastric end into a coil of the jejunum. Death followed the next day. As to the plastic operation of Heinecke-Mikulicz, Fritzsche[1] says that Heinecke's operation may at times become so formidable and dangerous that it certainly would be better to replace it by gastro-enterostomy. And, indeed, the latter operation has so far, in the above-mentioned conditions, always been safer, and of more lasting success.

Gastro-enterostomy may also have its use in cancer of the pancreas, where the tumor presses upon the pylorus or duodenum. I saw such a case about six years ago, where the situation of the tumor and the condition of the stools led me to the diagnosis of cancer of the pancreas. The patient suffered terribly for months from obstruction of the pylorus, and, post-mortem, I found that the stenosis was caused by pressure of the pancreatic tumor and by some adhesions. Another reason speaks in favor of operating in cases where a tumor can be felt in the region of the pylorus, causing symptoms of obstruction. I know and have read of cases where a diagnosis of pyloric cancer was made, and a post-mortem revealed a tumor caused by gall-stones. Such cases are certainly very mortifying to the physician, the more so as they can be readily, and with a high degree of safety, relieved by an operation.

A few words might yet be added in regard to the methods we adopt to arrive at a diagnosis of cancer. I think the inflation of the stomach with gas should never be omitted. In my case it demonstrated the immobility of the tumor and the separation of the nodules, outlining at the same time the course which some took along the lesser curvature, thereby making the diagnosis somewhat positive. The injection of water into the bowels is also a very valuable aid in the diagnosis of abdominal tumors, and it assists us especially in determining whether they belong to the stomach, transverse colon, gall-bladder, or omentum. The examination of the stomach as to the presence of acid or its absence may be of service in some cases, but it should not be forgotten that hyperacidity has been observed in a few cases of gastric cancer.

We may now turn to the technique of the operation and to the different points which are of especial value in contributing to the success, immediate or remote, of the operation. Some surgeons think they derive some advantage in regard to the prevention of collapse from the way they use the anæsthetics. They recommend chloroform up to the stage of insensibility, and then to continue the narcosis with ether. I have anæsthetized in that manner for three years—since Kochler recommended it so highly—with increasing satisfaction. I think most operators make the incision in the median line, and from appearances it will hold its place in the future. In regard to the manner of effecting the anastomosis, I think Senn's bone plates will be mostly employed. Ransohoff's dissatisfaction with them can be remedied by making the opening larger and by drilling the suture holes some little distance from the central opening. I must confess I would have a slight hesitancy in using catgut rings for the stomach, for fear they might be too rapidly absorbed. But, again, I do not think it necessary to use undecalcified bone plates for the gastric portion, as in my case it was found nearly intact in the stomach after forty-five days. I have of late prepared my plates from the lower angle of the shoulder-blade of young cattle (a heifer, two years old). They can be easily cut with the knife and are ready for use in half an hour, having kept them for that length of time in absolute alcohol. To prevent them from becoming distorted by warping, they should be compressed between blotting-paper. I have also simplified the manner of passing the threads through the plates. Senn's description on that point has never been clear to me, and I have heard others express the same idea, although all his writings are well appreciated for their terseness and lucidity. I could never see why "the threads should be fastened to the surface of the plate by another thread passing through the perforations in the shape of a loop and fastened at the back." In my case I determined to follow what, in my opinion, seemed to be the simplest way, and which may be easily understood from the accompanying illustration (Fig. 1). For the plate in the stomach the thread is introduced at 2, and comes out at 1—that is, at the right side of the plate. For the bowel it is also introduced at 2, and comes out at 1, but at the left side of the plate. This is done so that the needles, after having trans-

FIG. 1.



[1] Centralblatt f. Chirurgie, No. 2, 1889.

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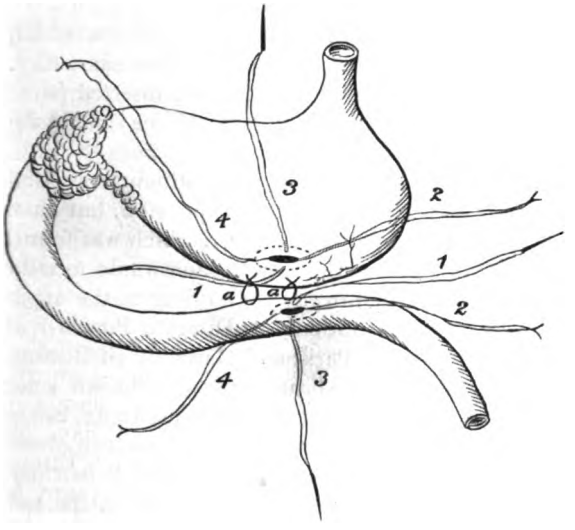
fixed the bowel, will indicate the threads which should be tied first. After having tied 1, a pull on 2 will bring the plates with the wall of the stomach and bowels together; then tie at 2. Nos. 3 and 4 are then tied in their respective order. To prevent further confusion, it might be well to use black thread for 1 and 2 and white thread for 3 and 4. Before tying the threads, however, it is well to introduce a few Lembert sutures at the lower side, at the point of union of stomach and intestine (Fig. 2, *a a*).

FIG. 2.

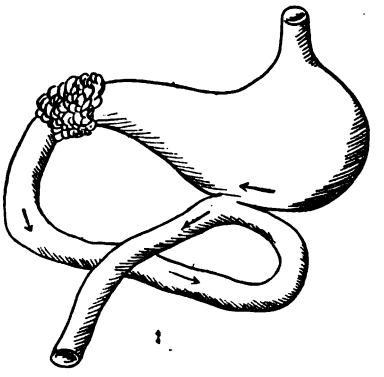


In my case it was neglected, and prolapse of the mucous membrane necessitated two sutures, which were difficult to introduce after the parts were united. It is also well to puncture the serous coats of stomach and bowel overlying the plates, in order to promote rapid adhesion. I further think that a few reinforcement sutures (Lembert's) will put the mind more at ease in regard to perfect union.

The most important question which confronts us is the selection of the proper portion of the intestine for the anastomosis. If you read the report of some operators, it would seem to be an easy matter; others, again, have had considerable trouble in finding it, and they advise simply to go down into the pelvis and take hold of any loop of the smaller intestine that may present itself. But we have a sufficient number of cases on record to make us cautious in selecting the first presenting coil for anastomosis. We have seen in Page's case that nutrition is not carried on properly if we select the lower part of the ileum.

Senn had also some kinking and the formation of a spur in one of his cases which he ascribes to the great length of the intestinal part between the stomach and the new opening, and he recommends to search for the duodenal or upper jejunal portion of the bowels. It should, therefore be our special aim to look for such parts, which, however, is not always such an easy matter as some make it to be. Nothnagel's test, which has been pressed into service very often, proves a failure. Courvoisier's and von Hacker's methods, cutting through the omentum and transverse mesocolon in order to stitch the duodeno-jejunal flexure to the posterior wall of the stomach, will probably not find many imitators, although it took Jesset only thirty minutes to perform it on the dog. The method which at the present commends itself to our special favor is the one of Hahn. With the index finger and thumb of the right hand he searches for that portion of the pancreas which lies over the spinal column, and then takes hold of the coil which directly passes over to the left side. If it does not follow our hand on pulling we have the beginning of the jejunum; passing along this for about twelve to fourteen inches we have the right spot then for anastomosis. Rockwitz thinks it of great importance to promote peristalsis right from the start. In the normal condition he finds it to have a continuous course from the stomach into the bowels, whereas, when we anastomose the parts as it is generally done, the peristalsis of the stomach starts from left to right and that of the bowels from right to left. He therefore advises to attach the bowel in such a way that the efferent coil is to the right and the afferent one to the left. (Fig. 3.) But as

FIG. 3.



far as I could see from my own case and from the cases reported, I think there is no necessity for such a procedure. Should vomiting or symptoms of ileus arise, lavage of the stomach must never be omitted.

REMARKS UPON EMPYEMA.[1]

BY MARY PUTNAM JACOBI, M.D.,
OF NEW YORK.

I DO not propose to enter into an exhaustive statistical discussion in regard to empyema or its treatment. This ground was largely, though not completely, cov-

[1] Read before the New York Academy of Medicine, Section on Pædiatrics, November, 1889.

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ered in a discussion held at the New York Academy of Medicine, in the winter of 1887, in which several physicians and surgeons took part. I may add that this discussion yielded more positive and useful conclusions in regard to the treatment of empyema than were reached by the discussion of the International Congress at London, in 1881. In six years, a most substantial progress had been effected.

The physiological problems involved in empyema have been discussed theoretically and experimentally, as recently as last September, at the first meeting of the American Pædiatric Society, held in Washington. This discussion was sustained by Drs. O'Dwyer and Northrup, and the President of the Society, all from this city.

It might easily seem, therefore, that nothing remained at present to be said upon the subject. Nevertheless, as various considerations have suggested themselves to me during observations of the case I am about to relate, I take the liberty of laying them before the profession.

A little boy, four years of age, was brought to my office in September, with a history of five weeks' febrile sickness, which had been considered by one physician to be a malarial fever; by another, typhoid. For some time the fever had been of a hectic type, coming on only in the afternoon. On the occasion of the first visit, which was in the morning, the temperature was normal. The child was excessively pale, with a suggestion of œdema in the face, but not elsewhere. The respiration was not accelerated, and cough had been so slight as not to be mentioned by the mother until after I had inquired concerning it. Inspection of the chest, however, at once suggested thoracic trouble, for the anterior portion was markedly arched forward, the arching being equally prominent over the left side and over the sternum, and not much less over the right side. The mother had noticed that the chest was—as she expressed it—swollen. There was some dilatation of the veins over the sternum. On the left side, absolute percussion dulness extended from the second rib over the whole anterior region of the chest and reached the right border of the sternum. Above this zone of absolute dulness, a zone of relative dulness extended to the apex. Posteriorly, dulness extended from the spine of the scapula to the base of the lung. Over the region of absolute dulness, breath sounds were entirely absent. There was no tubular breathing. From the age and fretfulness of the child, it was impossible to obtain whispering pectoriloquy—which is said to be present in serous effusion, absent in empyema, and to constitute a valuable means of diagnosis between them. Above the region of absolute dulness, on the left side, both before and behind, existed tubular breathing; right lung was normal. The apex of the heart pulsated in the epigastrium.

I regret that cytometer measurements of the chest were not made at this time. Nor was it noticed whether the liver was displaced, through compression and compensatory longitudinal enlargement of the right lung.

The assemblage of signs and symptoms just enumerated sufficed to justify an almost positive diagnosis of a purulent effusion in the left pleura, sufficiently abundant to displace the mediastinum considerably to the right side. An exploratory aspiration was deferred until the moment for operation, which was appointed for the afternoon of the same day. At this time the hypodermic needle, inserted painlessly after previous application of ice and salt, withdrew a syringeful of pus.

In saying that anterior mediastinum was displaced, I have used the current expression, but have not used it in regard to the heart, which was found beating in the epigastrium, and which would usually be said to be pushed over. According to the arguments and demonstrations of Douglas Powell,[1] of London, Peyrot,[2] of Paris, and Garland,[3] of Boston, the displacement of the heart in pleural effusion is not due to pressure of the fluid on the diseased side, but to aspiration of the lung on the sound side of the chest. "The mediastinum," observed Dr. Powell in 1869, "is poised by the contending elasticities of the two lungs." The lungs exercise a traction power on the mediastinum, and also on the thoracic walls. The latter have been shown by an experiment of Dr. Salter's, repeated by Dr. Powell, to move outward about $\frac{1}{100}$ of an inch when air was admitted into the pleural cavity after death. This shows that during life, and while the lungs were expanded, they were habitually drawing the thoracic walls inward, by virtue of their elasticity. When the lungs collapsed, by the admission of air into the pleura, this traction ceased, and the thoracic walls moved outward to an extent corresponding to the previous retraction. The same degree of traction must necessarily be exerted on all parts of the pleural cavity, hence upon the mediastinal walls as well as on the thoracic. But as both lungs exercise the same pressure, each, normally, neutralizes the influence of the other, and the heart remains poised or suspended from the attachments of its great vessels, between two equal opposing forces.

If, now, the elastic traction of one lung diminishes, the power of the other lung is proportionately increased, and the mediastinum, with the heart contained in it, is accordingly drawn to that side.

Dr. Powell points out that it is only in this way

[1] British Medical Journal, 1869.
[2] Archives Gén. de Méd., 1876.
[3] Boston Med. and Surg. Journ., 1878, and monograph.

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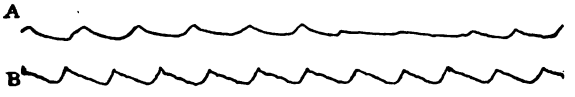
that we can explain the displacement of the heart in the presence of a very moderate degree of effusion. An important corollary to the same proposition is, that cardiac displacement is not to be held to indicate a very large amount of effusion. On the contrary, it is one of the earliest symptoms, and observable while the effusion is yet quite small.

Dr. Garland, in his most ingenious monograph on Pneumono-dynamics,[1] quotes Skoda as expressing the same opinion on the cause of cardiac displacement. Nevertheless, it is unquestionable that the majority of writers continue to speak of the displacement of the heart by pressure of the effusion.

It is easy to verify by experiment Dr. Powell's statement—that cardiac displacement occurs with very small effusions, and soon after they are poured out. Indeed, in the experiment, where the effusion is necessarily sudden, the displacement is equally sudden. Thus, in an etherized dog, having ascertained that the cardiac apex was in its normal position, I injected—through a glass canula, fitting air-tight—seventy-five cubic centimetres of warm water into the left pleural cavity at the anterior axillary line, and in the seventh intercostal space. Three minutes later the heart was found to be visibly and forcibly pulsating at the right of the sternum. A respiratory tracing taken immediately, with a tambour placed over the right side of the chest, shows a great amplification of the respiratory excursion, both in inspiration and expiration.

Tracing No. 1 contains (*A*) a normal tracing taken before any operation, and (*B*) a tracing taken immediately after plunging one arm of a fine glass T-tube into the left pleural cavity.



In this experiment the tissues were incised down to the internal intercostal muscles and the glass tube plunged into the pleura. The facility with which this can be done shows the rapidity with which the lung retracts with its visceral pleura, so that the virtual cavity is instantaneously converted into an actual one. Were not this the case, it would be almost impossible to open the pleura without wounding the lung. The following tracing shows

the effect on respiration of opening the pleura in the way described—the inspiration on the uninjured side becomes more ample, as is seen in tracing No. 3.

[1] Pneumono-dynamics: Boston, 1878.

The fourth tracing, taken after injection of seventy-five centimetres of warm water, shows that this amplitude is still further increased.

As Dr. Douglas Powell remarks, the heart is so movable that its displacements may serve as a most delicate and accurate measure of any perturbation in the normal intra-thoracic equilibrium of forces—that is, of balancing tractions. It is interesting to notice that while a diminution in the elastic traction of the lung, which coincides with a pleural effusion, allows the heart to be displaced—*i. e.*, drawn over to the opposite side—diminution of elasticity due to solidification and diminution of size, as when lung tissue collapses over an empty cavern, is followed by displacement of the heart toward the affected side, so that marked lateral and upward displacement of the heart is an important sign of contraction of pulmonary caverns, and, to a considerable extent, measures their rate of progress to healing. But in this case the heart follows the negative pressure determined by the potential vacuum which exists, when the lung tissue tends to retract from the thoracic wall. When there is a pleural effusion there is no potential vacuum, for the fluid completely fills all the space left by the retracting lung, and the amount of fluid and amount of pulmonary retraction are necessarily exactly proportioned to each other. It is only in this sense that the fluid can be said to favor directly the cardiac displacement. Its principal effect is indirect, and exerted through the lung, which, in presence of the fluid, loses a portion of its power of elastic traction.

This last remark brings me to another very interesting and much debated problem of pleural effusions, namely, the precise effect exercised on the lung by the fluid in the pleura.

The same line of thought which leads to the view that the heart is displaced by pressure, sustains the current theory that the lung is "compressed" by the effused fluid. Indeed this theory is habitually taken as a matter of course, and as not needing discussion. Nevertheless, as soon as we begin to reflect on the nature of the lungs, and of the forces which maintain them expanded in the thoracic cavity, it seems to me remarkable that the true view of the case should have remained so long undiscovered. The first demonstration of this view that I have read, was given by Dr. Garland, of Boston, in 1878, and is admiringly adopted by Dr. Douglas Powell. This view reposes upon obvious theoretical considerations; upon the results of experiments with inflated balloons in glass vessels, where the physical conditions of pleural effusions are imitated with surprising accuracy; finally, upon

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the results of injections into the pleural cavity of dogs made with fluids capable of solidification, and which form permanent moulds *in situ*, and thus indicate the course taken by the injection in the fluid state.

The theoretical consideration is that the lungs are highly elastic bodies, normally maintained in a state of extreme tension by the pressure of the air contained in them, and which, while the pleural surfaces remain in contact, is counteracted by nothing. The atmospheric pressure hence acts with full force, and keeps the lungs exactly applied to the walls of their containing cavity, except in the complemental space at the base, reserved for forced inspiration. But if either air or liquid be admitted into the pleura, the internal atmospheric pressure within the pulmonary cavities, the bronchi, and air-cells, is counteracted to an exactly proportionate extent. To the same extent to which the pressure of the air is diminished, is the elastic tissue of the lung able to return from the over-stretched conditions into which it had been put by the unopposed pressure of the air. Like any other elastic body, the lung tends to return to its original size as soon as the distending force is withdrawn. In the case in question, the distending force is not withdrawn, but it is partially neutralized. To the same extent does the elasticity or retractility of the lung come into play: it retracts upon its contained air.

As in every interplay of physical forces, the effective condition of this phenomenon, the retraction of the lung, cannot be considered its efficient cause. The effusion does not precede in time the retraction; but the two phenomena march *pari passu* together. The efficient cause of the retraction of the lung is the elasticity of its tissue, which comes into play as soon as the obstacles to its manifestation are removed. The effusion removes the obstacle by neutralizing to a greater or less extent the pressure of the air. It is, therefore, the condition upon which the manifestation of the retractile power of the lung depends; but by no means the efficient cause of the retraction or of the diminution of size.

An elastic body cannot be compressed until its elasticity is exhausted.

So long as any elasticity remains, the body exercising pressure can only neutralize atmospheric pressure, and allow the over-stretched elastic body to return upon itself. The pressure allows this; it does not compel the reduction of the body to a small size, as is done when inelastic bodies are compressed, by forcible approximation of their molecules.

This theoretical exposition is well illustrated by Garland, by means of such a little apparatus as is here shown. It consists of a pear-shaped flask, surmounted by an opening closed with a rubber cork, and terminating below in a long tube, through which passes a stop-cock. Within the flask is suspended a thin rubber balloon, attached to a glass tube, which passes air-tight through the rubber cork. The stop-cock and tube at the lower

FIG. 1.

Balloon around glass rod, before insertion into flask.

part of the flask are filled with water, by immersing the tube in water to above the level of the stop-cock, while the cork is out of the flask. The tube is then plunged under water, the stop-cock opened, the cork inserted tightly, and the balloon inflated through the glass tube until it fills the flask. If the size of the balloon and the flask corresponded accurately, the balloon would adapt itself accurately to the walls of the flask. As it is, the adaptation is exact enough to fulfil the conditions of the experiment. See Fig. 2.

The stop-cock may then be closed and the apparatus be lifted out of the water without causing any change. The balloon remains inflated, for, though its cavity communicates freely with the open air, the column of water remains in the lower tube. If now, while this lower tube is plunged to a greater or less extent under water, the stop-cock be opened, the column of water in the tube will be subjected to the pressure of the water in the vessel—pressure which increases with the depth of immersion. At a certain depth there will be no change, for the column of water below the balloon will be equal to the pressure of the atmospheric air within. If the tube

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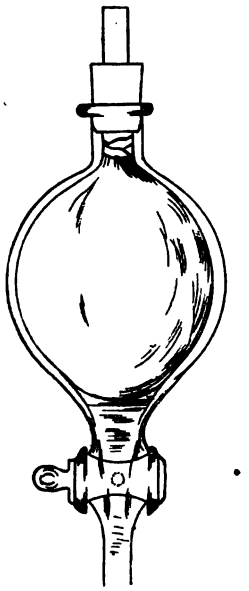
be plunged lower, the pressure of the column of water will become equivalent to a part of the pressure of the air, and will neutralize it. To exactly

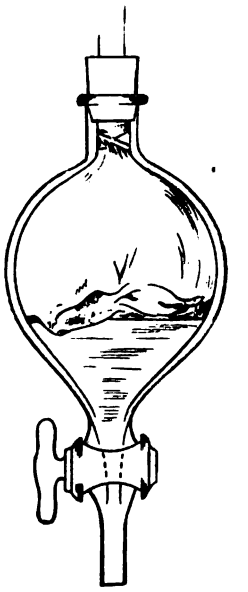
FIG. 2.



Flask with balloon expanded and filling flask. Tube filled with water, and then closed.

the same extent will the balloon be relieved of a certain degree of tension, and return upon itself

FIG. 3.



Flask after some water has been admitted by turning the stopcock while nozzle under water. Balloon retreated and partly collapsed.

proportionately. Thus, as Garland expresses it, the "balloon flees before the advancing column of water," and must continue to do so until its retractility is exhausted, and the flask is exactly filled by water plus the collapsed balloon. In this condition it would be impossible to aspire water into the flask, as had previously been done while the balloon was retracting and exerting a negative pressure upon the column of water. But if more water were injected forcibly into the full flask—as it could make no room for itself against the rigid walls—it would, with a *point d'appui* taken upon them, press upon the balloon until the compressibility as well as the elasticity of the latter was exhausted. The same thing may happen with pleural effusions, but only under one of two circumstances. The effusion may be exceptionally abundant, or the lung may have been already consolidated by disease, and thus, at the outset, deprived of its elasticity, and, therefore, exposed to compression much earlier in the course of an effusion.

Observation of this simple but instructive apparatus illustrates some other circumstances. As the balloon retracts, returning upon itself from the condition of over-distention, it becomes flaccid. It is to an analogous flaccidity of the lung that Weil has attributed the phenomenon of tympanitic percussion resonance often heard over the lung above the level of a pleural effusion.

The stomach, whose walls are flaccid, gives a tympanitic resonance which, as every one knows, contrasts markedly with the much lower percussion note of the normally distended lung. It is easy to demonstrate experimentally, as I have myself done before a class, by inflating the excised lung of a calf or sheep, that, when inflation was complete, percussion yielded the normal tone; but if air was allowed to escape from the lung, percussion gave a tympanitic sound. According to Weil, in the distended lung the walls of the air-cells do not vibrate with the vibrations of their contained air; but in the relaxed lung, as in the stomach and intestine, the walls of cavities containing air are thrown into vibrations whenever the air vibrates; and the coincident vibrations of heterogeneous bodies result in the tympanitic sound.

Another point deserving notice in the apparatus is the reëxpansion of the balloon if water be allowed to run out through the inferior opening. The balloon reëxpands as rapidly as it had retracted. It is drawn by the negative pressure of the water potentially; the efficient cause of the reëxpansion being the pressure of the internal air, when a tendency exists to form a vacuum, as the water falls away from the balloon. This phenomenon is of great importance in understanding the reëxpansion of the lung after operations for the removal of a pleural effusion. I will return to it again. In describing the condition of the child previous to operation, I have said that the region

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of absolute dulness reached the second rib in front and the spine of the scapula behind, and was bounded superiorly by a horizontal line. There did not exist the curved, or letter S line, discovered and described by Dr. Ellis, of Boston. According to this line, the region of absolute dulness is highest in the axillary line, and thence descends toward the median line, to the sternum in front, to the vertebral column behind. Dr. Peter, of Paris, interpreted this line as an indication of a purulent effusion, which, being more viscid than a serous fluid, would adhere in places to the thoracic walls, while the serous fluid would assume the hydrostatic level. It is unnecessary to discuss this theory, for it has been abundantly proved that the curved line can be distinguished by careful percussion when the effusion is serous as well as when it is purulent. But Garland, in seeking to explain the *rationale* of this elevation of the fluid in the axillary line, has ingeniously demonstrated the value of the curved line as a measure of the remaining retractility of the lung—as a measure consequently of the amount of effusion.

Since the elevation of one part of the upper surface of a mass of liquid is contrary to hydrostatic laws, it is clear that these must have been thwarted by some special force acting in opposition to them. Fluid cannot rise above its own level, and if it is found above it, it must have been driven or pushed up. Now it has already been shown, and elegantly illustrated by the balloon and flask apparatus, that during the early stages of a pleural effusion, while the lung is retracting, it necessarily aspires the fluid in contact with it, by virtue of negative pressure. The force of retraction is greatest where the extension has been greatest, hence first and most powerfully exercised from below upward. Subsequently, the lung also begins to retract in its transverse diameter, or from the external thoracic wall toward the lung root. In so retracting, a virtual vacuum is created between the lung and the chest wall, and into this the fluid rises. It rises first and higher in the axillary line, because the force of retraction is greater in the transverse diameter of the lung than antero-posteriorly. Correlatively, as long as the region of absolute dulness is confined to the inferior and axillary portions of the chest, and the diaphragm is not depressed, we may infer that the effusion is moderate, and that the lung retains much retractile, hence much expansile, power. Even when absolute dulness has spread over the anterior and posterior regions of the chest, the fluid may be known to have followed the lung, so long as its upper border presents a curved line. But if the lung reaches its furthest limit of retraction, it ceases to aspire the fluid, or to hold this above its normal level, which is a horizontal line.

Contrary, therefore, to the theory of Peter, the maintenance of the curved line, incapable of distinguishing the nature of the fluid, does indicate moderation in its amount, and preservation of good retractile power in the lung; while the substitution of a straight line, indicating the natural level of the fluid, shows that the effusion is extensive, and the lung on the point of being compressed.

Garland tested the respiratory force of the lung by means of injections, into a dog's pleura, of cocoa butter, which was allowed to remain there until complete solidification. Examination of the moulds thus formed showed that, whether the injection had been made with the dog in a horizontal position or suspended vertically, the fluid had risen above its hydrostatic level, and formed a curved line projecting toward the axilla. I have imitated this experiment and obtained similar, though less striking, results, as the amount of cocoa butter injected was smaller.

(*To be continued.*)

PROPOSED LEGISLATION RELATING TO THE MEDICAL PORTION OF THE PENSION BUREAU.

BY HENRY BIXBY HEMENWAY, M.D.,
OF KALAMAZOO, MICH.

IT is not a matter of indifference to the general profession how any portion thereof is regarded and treated. The disgrace of a single man is a disgrace upon the fraternity. A physician doing public service is almost without exception illy paid. How many health officers receive compensation proportionate to the work done? No one would think of letting the position of city or county attorney to the lowest bidder, and yet in a wealthy and intelligent community, at no distant period in the past, the position of county physician was given to the lowest bidder, after advertising for proposals. While attorneys may regulate admission to the bar, a like privilege is not granted to physicians. Because many knaves with little education secure large patronage, the people depreciate the medical service. Two boys set out, the one to study medicine and the other law. The lawyer is admitted to the bar at the end of two years, after having been able to pay his expenses by legal writing while studying. The doctor must be at constant expense for three full years before he is entitled to earn anything by his profession. Each is then called upon for a like amount of public service. The lawyer's bill is promptly audited, while the authorities hesitate to allow one-fourth as much to the doctor. Such conduct toward our profession is belittling and degrading. It is therefore time that the whole profession should be aroused to act in harmony.

The attention of the profession at large has occasionally been directed to pension lesislation. Dr.

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P. S. Connor, of Cincinnati, read a paper before the American Academy of Medicine, at Pittsburg, 1886, in which he urged the appointment of forty boards of examining surgeons, each consisting of two members, who should devote their entire time to that service. His paper was published in the *Journal of the American Medical Association* (vol. vii. p. 570). Dr. L. Brown, of Pottsville, Iowa, in the same journal for January 1, 1887, criticised this paper at length, but he omitted to say that such a special service would not attract men of large experience, and lacking that, the examiners would be dogmatic and theoretical rather than practical. I might give illustrations of this, drawn from the work done in the Washington office, had I the space.

On the other hand, it is not desirable that boards be too greatly multiplied; first, because from lack of available material from which to construct boards, the quality of the work done must deteriorate; and, secondly, if the work is so decreased as to diminish materially the pay of members, the position cannot command the best talent.

In this same journal for Oct. 27, 1888, is an article by Dr. John W. Wright, of Columbus, read before the Section on Ophthalmology at the meeting of the Association in 1888, on "A Plea for the Better Recognition of the Oculist in the Service of the U. S. Pension Department." A like plea might be made for all specialists treating diseases of men. It simply shows hows how preposterous it is to attempt to establish a board at every country cross-roads.

Pension applicants are examined only when ordered by the bureau, or by a "special examiner." (The "special examiner's" work is purely legal, and cases are put into his hands in which the evidence is conflicting or doubtful.) Examination orders are issued in duplicate, one going to the applicant and the other to the particular board or single surgeon before whom the case is ordered. An order is to be obeyed by the applicant and honored by the surgeon within three months from date of issue. At the end of that time, orders remaining in the hands of the surgeon are returned with the endorsement, "failed to appear." The order to the surgeon gives the statement of claims. When it is impossible for the examination to be made by a "board," the Commissioner orders a single surgeon to visit the applicant and make the examination.

The boards, or single surgeons, do not grant the pension, or pass upon the legality of the claim. Evidence as to the degree of disability, or to the cause thereof, have no value for the board. That should be sent to the bureau. The work of the examing board consists of making a record of the present physical condition of the applicant, with an estimate of the degree of disability from each cause, including senility. Formerly the examination was only with reference to the special claims. Under the late medical referee, as well as the present, all disabilities have been examined, whether originating in the service or not. The record made is called the "certificate of examination."

In the Washington office the force consists of one medical referee, one assistant, two surgeons, and eighteen medical examiners. These men receive each per annum, respectively, $3000, $2500, $2000, and $1800. The completed certificate is first examined by one of the eighteen medical examiners, later by a surgeon and the medical referee or his assistant. In passing upon the case, the examiners have before them all the papers in the case, often including several certificates of examination. Can it be expected that a dozen and a half medical examiners should carefully judge all the certificates for the country? Is it strange that when the magnificent salary of $1800 is paid each examiner, incompetent assistance should be secured. Dr. Wright's remark really applies more forcibly to the Washington office than elsewhere.

A certificate of examination must be in the handwriting of a member of the board. It gives the name, rank, service, and post-office of applicant, number of his claim, date of examination, and post-office of board, disabilities for which pension is claimed, pulse rate, respiration, temperature, height, weight and age of applicant, and applicant's statement. These are followed by results of examination, and ratings of each disability. If the claim is on diarrhœa, for example, the certificate must show the condition of tongue, teeth, gums, skin, liver, spleen, stomach and intestines, and heart. "The rectum must be explored digitally or with speculum," and any fissure, fistula, hæmorrhoid, or prolapse must be carefully described. As to heart, it is required to give location of apex beat, area of dulness and position, character of impulse, character of sounds, exact location of bruit as to time and valve, dilatation or hypertrophy, dyspnœa, œdema, or cyanosis. If disease of kidneys is affirmed (which generally means simply lumbago), the condition of all vital organs must be stated, with chemical and microscopical examination of urine and opthalmoscopic examination of the eye. Gunshot and other injuries, neuralgic tracts, etc., must be shown by a diagram. Every certificate must be signed by each member upon its face and back, and it must be copied verbatim into the record book, and the copy also signed by each member.

It will therefore be seen that the work is not small—is, in fact, many times greater than that required by any life insurance company. It is not allowable for one member of a board to make the examination. All must participate. Boards vary

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greatly as to capacity for work. One may examine thoroughly twenty men, while another is going through five cases. This capacity for work depends upon system and concentration. Since it takes more time to write the certificate than to make the examination, much depends upon the speed of the writer. It is not allowable to have a clerk. Twenty examinations is a legal day's work, and as a rule it is a full day's work. A good certificate must be short, concise, clear, and complete.

Aside from any writing that may be done at the meeting of the board, it is expected that the secretary shall transcribe the certificate into the record book, back the certificates (for filing), make out the daily and quarterly reports, and attend to the correspondence of the board. For each day's work there must be made out one daily, and two quarterly reports. These reports give, for each applicant, date of examination, name of applicant, character of claim, number, and services, and the fee of each examiner. The names must be arranged in two alphabetical series. For a day's work of twenty examinations made by the Kalamazoo board, the word "Kalamazoo" must be written sixty times on the certificates and fifteen times on reports; total, seventy-five times. It may occur more times. The date must be written 102 times for the same work, and each member must sign his name forty-three times. No stamping is allowed.

Surgeons are supplied with the blank forms of the office, and envelopes addressed to the Commissioner. They must supply other stationery, pay postage on all correspondence, except with the Commissioner, and furnish an office with the necessary instruments for making the examinations in accordance with modern science.

Prior to the act of March 3, 1885, surgeons received two dollars for each examination. That act reduced the compensation so that now surgeons receive two dollars each for each examination up to five, and one dollar each on further examinations up to twenty, examined on the same day. There is no legal compensation for the extra labor devolving upon the secretary of the board. Many boards, however, agree upon certain concessions. Some pay the secretary five or ten dollars per quarter; others ten per cent. of the receipts of the board; others still, ten to twenty-five cents per examination.

The present small compensation is made still smaller by delay in auditing and paying accounts. On October 23, 1889, the accounts for the board of which the writer is a member had not been audited for the quarter ending June 30th.

A meeting of examining surgeons was held in the Pension Building during the International Medical Congress, September, 1887. After a general discussion, it was resolved unanimously that the present compensation is far too small, and Congress was asked to restore the former fee. At the request of Dr. Campbell, medical referee, I drafted two bills, which were introduced before the lower House by the Hon. J. C. Burrows. The first of these relates to the medical staff in the Washington office, and reads as follows:

A BILL

To increase the efficiency of the Medical Division of the Pension Bureau.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the medical staff of the Pension Office shall consist of one medical referee, one assistant medical referee, three surgeons, and twenty-four medical examiners.

SEC. 2. That the medical referee shall be a man of preëminent professional ability, and shall receive the sum of four thousand dollars annually. He shall be the chief of the Medical Division, and as such shall oversee and arrange the work of said division.

SEC. 3. That the assistant medical referee shall also be of preëminent professional ability, and shall receive an annual salary of three thousand and six hundred dollars.

SEC. 4. That the three surgeons shall be experts in their profession, and shall each receive an annual salary of three thousand dollars.

SEC. 5. That the medical examiners shall be surgeons of education, skill and experience, and shall receive each an annual salary of two thousand and five hundred dollars.

SEC. 6. That all former acts or portions of acts conflicting with the provisions of this act are hereby repealed.

SEC. 7. This act shall take immediate effect.

It adds one surgeon and six examiners to the present force, and increases their salaries as follows:

Medical Referee, from $3000 to $4000. Assistant Referee, from $2500 to $3600. Surgeons, from $2000 to $3000. Medical Examiners, from $1800 to $2500.

As originally drafted, at Mr. Burrows' suggestion the salary of medical referee was $5000 and his assistant $4000, but Dr. Cambell asked that they be cut down as above to assist in the passage of the bill.

The second bill relates to boards of examining surgeons, and reads:

A BILL

To increase the efficiency of Boards of Surgeons for the examination of pension applicants.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That each member of each board of surgeons for the examining of applicants for pensions, shall, as now authorized by law, receive the sum of two dollars for the examination of each applicant.

SEC. 2. That the secretary of each board of surgeons

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shall receive a further compensation of fifteen cents for each examination.

SEC. 3. That the secretary of each board of surgeons shall be, and hereby is, empowered to employ a clerk, and for the official conduct and pay of such clerk the said secretary shall be responsible.

SEC. 4. That all former acts, or portions of acts, in conflict with the provisions of this act, are hereby repealed.

SEC. 5. This act shall take immediate effect.

Dr. Campbell thought that section 2 ought to say twenty, in the place of fifteen cents. So far as examining boards have been heard from, all agree that it should say twenty-five cents, and when the bill is again introduced, this change will be made. It must be noticed that section 3 does not add any expense, but makes legal the employment of a clerk by the secretary.

Mr. Burrows has introduced these bills before the present session of Congress, and Mr. Stockbridge will present them in the Senate. It is therefore hoped that *every* physician, whether in the government service or not, will, *without delay*, write to his Representative and Senator in support of these bills. It is not claimed that the pay here proposed is such as it should be, but it is better than at present. If all will give their aid, the changes may be accomplished. If the present low rate of compensation is continued, the service must deteriorate. Imperfect work necessitates more frequent re-examinations, and justice to the pensioner is impossible.

HOSPITAL NOTES.

ANTISEPTIC IRRIGATION FOR SYNOVITIS OF THE KNEE. IMPLANTATION OF MUCOUS MEMBRANE IN TRAUMATIC STRICTURE OF THE URETHRA. IMPLANTATION OF BONE.

Abstract of a Clinical Lecture Delivered at the New York Hospital.

BY ROBERT F. WEIR, M.D.,
ATTENDING SURGEON.

DR. WEIR alluded to a case of chronic serous synovitis of the knee on which he had operated at the previous clinic. The fluid in the joint had been evacuated, and the joint repeatedly washed out with a 1 : 20 solution of carbolic acid under strict antiseptic precautions. After applying the usual dressing the limb was placed in an immovable apparatus. He called attention to the thickening that occurs around the joint after this procedure, and which is sometimes accompanied by some accumulation of fluid. So long as there is fluid the patient should not be allowed to go about; but when the thickening alone exists it may be disregarded, for it will slowly disappear while the patient is moving around.

He then presented a case of traumatic stricture of the urethra which had not yielded to the usual methods of treatment. The patient, a boy, thirteen years of age, sustained an injury to the perineum a little over a year ago; and following this, there was sloughing of the perineum and extravasation of urine, resulting in stricture and difficult micturition with a perineal fistula necessitating the operation of external perineal urethrotomy, which was performed on the patient in the winter of 1889–1890 by Dr. W. T. Bull. There was always great difficulty in passing an instrument, and the contraction recurred to such an extent as to demand a second operation, which was performed by Dr. L. A. Stimson in August. At the time of leaving the hospital, and for about two months afterward, the boy urinated through the natural channel, but no instrument could be passed into the bladder. Then the old perineal fistula broke open, and from that time on the urine was voided through this opening. Ordinarily, Dr. Weir remarked, traumatic stricture occurs anteriorly to the triangular ligament; but occasionally, chiefly as a consequence of blows or kicks received from behind, the injury is in the membranous portion, and very rarely in the prostatic portion, one instance of which was briefly alluded to. From a rectal examination of this case, there was little doubt from the thickening of the tissues found that the injury extended behind the triangular ligament. It was found on passing an instrument through the meatus to the middle of the perineum, and cutting down upon it, that a probe from that point passed only a very short distance without complete obstruction; an instrument was finally passed from the perineum upward into the bladder, and the urethra near the prostate was gradually enlarged from the size of a No. 10 French bougie until sufficient room was gained to admit a No. 30 sound. While doing this much cicatricial tissue was encountered both anteriorly and posteriorly to the urethra. The space between the anterior urethra and the posterior portion was then cut through the median line, and by division of the meatus, a No. 26 sound was passed in from that direction to the bladder. As the stricture had proved so obstinate under treatment, and showed such a strong tendency to recur, it was thought that benefit might accrue from replacing the mucous membrane which had been destroyed for about half an inch or more on its upper surface, and to an extent of nearly an inch on its lower aspect, by one of the grafting processes.

Wölfler, a former pupil of Billroth, stated before the Society of German Surgeons, in 1888, that he had been able to transplant mucous membrane with as much ease and success as was commonly met with in skin-grafting. It was only necessary that some means should be found which would secure adhesion of the pieces of mucous membrane for a short time in order to obtain the desired result. He had three times resorted to this method for impermeable stricture of the urethra, and in these cases had made use of pieces of mucous membrane from a prolapse of the rectum or of the uterus; but he had found that mucous membrane from some of the lower animals would answer the same purpose. He had employed the mucous membrane from the œsophagus of a pigeon, or from the œsophagus or bladder of a guinea-pig, because in these animals the mucous membrane is readily removed from the submucous tissue. It could certainly do no harm to resort to this method in the present instance, and it might be productive of much good.

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The operation had been performed four days previously, as it was considered that the grafts would be better applied after granulation had become established than on a bleeding surface.

Pieces of mucous membrane just removed from the œsophagus and bladder of a guinea-pig were then inserted in the perineal wound and retained in place by several fine sutures. A soft catheter was then introduced into the bladder, which smoothed out the wrinkled mucous membrane, and in addition held it *in situ*. This was fastened in position, and the wound lightly packed with iodoform gauze.

It is extremely difficult to say what will be the success of this procedure; but it must be remembered that the certainty of relief can only be definitely determined after the lapse of a number of months.

Dr. Weir then directed the attention of the class to the method of filling up large bone cavities by the implantation of small pieces of bone; and presented a patient, who two weeks before had been subjected to an operation for necrosis of the lower end of the tibia. The cavity left after the removal of the large sequestrum had been filled with pieces of decalcified bone, according to the method advocated by Senn, of Milwaukee. The operator had doubted the success of the operation both on account of the difficulty of securing a thoroughly aseptic cavity in this particular instance, and because he had not yet been able to understand how, under such circumstances, decalcified bone, catgut, or any similar material could be converted into new bone. He could readily believe that the material when introduced might act as a skeleton or framework for the new vessels, until these delicate structures were strong enough to live without such support. The dressing had not been disturbed for two weeks, and everything had apparently done well; but on removing the dressing, it was found that every one of the pieces of decalcified bone had dissolved and come away in the discharge from the wound. Notwithstanding this failure in grafting, there had been some organization of the blood-clot, and the cavity was considerably smaller than is usually found after the lapse of two weeks.

He proposed, in a similar case, which he was now about to bring before the class, to adopt another method of implantation of bone, and in doing this, he would be guided by the experience of Macewen, who was one of the pioneers in this department. The process consists in filling the bone cavity with very small pieces of bone which have been removed from a recently killed dog, selecting grafts, according to the suggestions of Poncet, from the neighborhood of the epiphyseal line, because of the greater nutritive activity there.

The patient was a tailor, thirty-seven years of age, who for twenty-four years had been troubled by disease of the left tibia, with occasional abscesses of this part. He was rather poorly nourished, and there was an opening on the outside of the left tibia just above the middle, which connected with the interior of the bone. It was probably a case of chronic bone abscess.

On chiselling away a little of the diseased bone, an abscess deep down in the bone was exposed. After removing the diseased tissue, and thoroughly scraping and cleansing the resulting cavity, some three inches long, one and a half inches wide, and the same in depth, small pieces of bone were introduced according to the method already described. The fragments were freely dusted with iodoform, the skin brought together with interrupted sutures, and the usual antiseptic dressing applied.

MEDICAL PROGRESS.

Treatment of Tubercular Arthritis with Injections of Iodoform.—DR. FEDOR KRAUSE has recently treated several cases of tubercular disease of the joints with injections of the following emulsion:

℞.—Iodoform	5	parts.
Mucilage of acacia	2.3	"
Glycerin	8.3	"
Distilled water	50	"

The injections were practised only on cases of severe tubercular arthritis in whom cure without operation seemed impossible. If an abscess of the joint existed the pus was withdrawn by means of a trocar, the cavity being thoroughly washed out with a 3 per cent. boric acid solution. Through the trocar opening the iodoform mixture was injected, after which passive motion was used in order that the iodoform should be brought in contact with all parts of the articular surfaces. The injections are only slightly painful, but a rise in temperature for one or two days occasionally follows. The results, Krause claims, are good, and the method is worthy of a more extended trial.—*Centralblatt f. Therapie*, January, 1890.

Suturing an Intra-capsular Fracture of the Femur.—Another case is reported from Italy in which PROFESSOR LORETA has sutured an ununited fracture of the neck of the femur. The patient, who was about forty years of age, had suffered considerable pain in the joint, the fracture having occurred more than a year previously. A long incision was made behind the great trochanter, and the capsule of the joint exposed as though an excision was to be performed. The capsule was incised and the ends of the bone scraped to promote union. The fragments were then brought in close apposition with twelve metallic sutures, the ends of which were brought out of the wound, so that they might be removed later. The wound was thoroughly irrigated, after which a drain and the usual sublimate dressing were employed. The limb was kept at rest by means of an external splint, and a few days after the operation the wires were withdrawn. A good recovery with a useful limb resulted.—*Illustrated Medical News*, December 14, 1889.

Further Observations on the Use of Antipyrin in Whooping-cough.—In connection with the diverse opinions upon the value of antipyrin in whooping-cough the observations of WINDELSCHMIDT, of Cologne, are interesting. This author has treated a series of 350 cases with antipyrin. The results in one-half of the cases were good, the duration of the disease being reduced to two or three weeks. In 30 per cent. of the cases either no results followed the administration of the drug, or the patients withdrew from treatment. In the remainder the antipyrin had a well-marked sedative effect. Windelschmidt considers that for this method of treatment to be effective it should be

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begun early in the case. The dose employed was one and a half grains for each year of the patient's age three or four times daily.—*Centralblatt f. Therapie*, January, 1890.

The Significance of Urobilinuria.—M. HAYEM considers that urobilinuria, when habitual, persistent, and varying in degree, has a clear pathological significance, and is a valuable indication in forming an early diagnosis in diseases of the liver. He regards urobilin as the characteristic coloring matter of hepatic incompetency. He has observed urobilinuria in the following diseases: 1. At the beginning of alcoholic cirrhosis. 2. In patients with cardiac disease in whom the liver is not enlarged it may be an indication of incipient hepatic lesions. 3. In numerous acute affections, when observed in alcoholic patients, such as typhoid fever. When a large proportion of urobilin is detected in this affection, reserve should be made with regard to the prognosis. 4. In newly delivered and nursing women. 5. In most forms of cachexia. Urobilin has a feeble coloring power, and is found in pale urine. The deep coloring of urine observed in certain affections (fever with perspiration, lassitude, overfatigue) is usually due to urochrome.—*British Medical Journal*, January 4, 1890.

[The following are Professor Tyson's directions for testing for urobilin: Add ammonia to the urine until distinctly alkaline, filter, and to the filtrate add a little chloride of zinc solution. The appearance of a green fluorescence indicates the presence of a considerable amount of urobilin.—ED.]

Acute Pancreatitis.—LANGERHAUS recently reported a case of acute pancreatitis before the Medical Society of Berlin. The patient, aged fifty years, became suddenly ill with vomiting, headache, giddiness, and weakness. During the following night the abdomen became markedly tympanitic and he suffered somewhat from dyspnœa. Cold applications temporarily reduced the tympany, which, however, soon returned accompanied with severe pain in the left hypochondriac region. When admitted to hospital an indurated swelling was observed above the umbilicus extending obliquely across the abdomen. The patient's temperature was slightly elevated; the pulse was weak and a few "rose" spots were discovered. The case was diagnosed typhoid fever. For some time the condition of the patient was but little changed. There was occasional but not violent vomiting for several weeks, when it became more frequent, the ejecta having an offensive odor. Finally, unconsciousness and death supervened. At the autopsy the pancreas was found completely necrosed and lying in a cavity formed by the distorted and adherent abdominal organs. It is to be noted that the duration of this case was more than eight weeks, most cases of acute pancreatitis terminating much earlier.—*Deutsche medicinische Wochenschrift*, December 12, 1889.

Unna's Treatment of Tinea Tonsurans.—UNNA believes chrysarobin to be the most useful remedy in all parasitic diseases of the skin. In tinea tonsurans the drug is not much used by most dermatologists from the fear that the drug may reach the eyes, where it causes severe inflammation. Unna has devised the following method of applying it which eliminates this danger: First, the hair around the affected areas is cut off, not shaved. Then a band of zinc oxide and glue is painted across the forehead, above the ears, and around to the back of the neck. Following this a chrysarobin ointment is carefully spread upon the diseased scalp, the ointment which he uses being composed of:

Chrysarobin	5 parts.
Salicylic acid	2 "
Ichthyol	5 "
Simple cerate	100 "

Or a simple 5 to 10 per cent. chrysarobin ointment may be used. A broad strip of gutta-percha paper is passed around the head in such a manner that the lower edge adheres to the oxide of zinc glue. This impermeable paper is then painted with glue and covered with a mull bandage, and over the whole a flannel cap is placed. The latter may be sewed to the mull bandage. Every twenty-four hours the cap and bandage are removed, and the gutta-percha paper cut to obtain access to the scalp, which is then cleaned, smeared with fresh ointment, and covered again with a new mull bandage and flannel cap. If the ointment finds its way through the dressings it must be carefully wiped off and the soiled portions thoroughly painted with oxide of zinc glue. Thus carefully protected, the child may be allowed to mingle with healthy children without danger of infecting them.

In four days the outer dressings are removed and the chrysarobin ointment replaced by a five per cent. ichthyol salve, which will dissipate the superficial irritation caused by the chrysarobin. At the end of the first week all the dressings may be removed and the scalp washed with oil and soap. The diseased parts are then seen to be of a lighter color than the surrounding skin.

The entire treatment is to be repeated three or four times, but Unna has never found that a fifth cycle of treatment was necessary to effect a complete cure.—*Monatshefte für Praktische Dermatologie*, Dec. 1889.

The Use of Papain in Suppurative Otitis.—DR. MCKINZIE JOHNSTON, of Edinburgh, writes that in chronic suppuration of the middle ear pain is an almost certain indication that the secretion has not free exit, which may be due to the smallness of the perforation, the viscidity of the pus, or to obstruction by growths or by hardened masses of dry pus, débris, or cholesterin. It is well known that if these conditions are neglected there is grave danger that the retained septic pus may lead to an extension of disease, possibly necessitating an operation for mastoid abscess, or even for cerebral abscess. It seems, therefore, evident that anything which will facilitate the cleansing of the middle ear, and readily dissolve hard masses of débris, etc., must of necessity decrease the risk of these serious consequences. In papain we have a drug capable, by its digestive action, of thoroughly cleansing the ear in those cases in which simple syringing is insufficient. Dr. Johnston has tried it now in a number of cases, and apparently with most satisfactory results. Of course, it is impossible to say that any one of these cases would have gone on to mastoid disease had they not been so treated, but cleansing of the ear was rapidly effected, and in one or two cases the relief of the pain was most marked.

The following is the way he employs the drug: 15 minims of a 5 per cent. solution of papain are dropped

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into the ear, care being taken that it reaches the bottom of the meatus. If necessary, the patient may be made to swallow while holding the nose, so as to draw the fluid in the middle ear. Mindful that bacteria develop largely in fluids acted on by this drug, it should be allowed to remain for one hour only, after which the ear is syringed out with boric lotion and carefully dried. This may be repeated as often as necessary.

This plan of treatment seems especially suitable to long-standing cases where there is only a little thin and very foul-smelling discharge, probably associated with diseased bone.—*Edinburgh Medical Journal*, January, 1890.

Ehrlich's Reaction.—DR. BACNACCI, assistant in Bufalini's clinic, has recently made a number of careful observations on Ehrlich's diacetone reaction. His studies included the urine of patients suffering from several different diseases. In cases of advanced phthisis the reaction was occasionally present, but not constantly. In the urine of patients suffering from pneumonia, variola, acute enteritis, and typhus fever, the test was usually negative. In diabetic urine the reaction could almost invariably be demonstrated. The reaction was also present in the urine of patients who were taking either iodol, sozoiodol, thymol, or strychnine. In diabetic urine which had been subjected to prolonged boiling the reaction could no longer be detected.

The author considers it probable that the reaction bears some relation to the sugar and acetone present in diabetic urine.—*International klinische Rundschau*, December 8, 1889.

[Ehrlich's or the diazo-reaction was first announced as a diagnostic sign of typhoid fever, and consists in adding to the suspected urine a solution of sulfo-diazo-benzol, then a solution of ammonia. If the reaction occurs, the mixture becomes at first deep red, which is followed by the precipitation of a dull green sediment.—ED.]

The Staining of Amyloid Tissues.—BUCHARDT describes the following new method of staining amyloid tissues in Virchow's *Archiv*:

Stain the sections in a moderately strong solution of gentian-violet in aniline water. Decolorize in a solution of hydrochloric acid (1 : 10) for ten minutes. The amyloid portions of the tissue are then a dark purple, the other portions colorless. Then wash in water and clear up in a solution of potassium acetate.—*Centralblatt f. medicinische Wissenschaften*, December 14, 1889.

Creolin Pills.—According to *L'Union Médicale*, the following is a convenient formula for the internal administration of creolin:

℞.—Creolin		1½ drachms.
Dilute alcohol		15 minims.
Extract of liquorice	of each,	1½ drachms.
Pulverized liquorice		
Tragacanth		15 grains.—M.

Make in one hundred pills.

Pharyngitis from Defective Drainage.—At a recent meeting of the Montreal Medico-Chirurgical Society DR. J. C. CAMERON endeavored to prove that when a number of cases of sore throat with adynamic symptoms break out in a household there is good reason to suspect defective drainage as the cause. He detailed ten cases which occurred in one house, in which an examination revealed a defect in the ventilation of the soil-pipe. In six of the reported cases both severe tonsillitis and ulceration, resembling that of diphtheria, were present.

Dr. Major, commenting upon this paper in the *Journal of Laryngology and Rhinology*, January, 1890, states his belief that defective drainage is frequently the cause of affections of the throat, both acute and chronic. In one instance coming under his observation, a family of five persons were attacked with painful symptoms referred to the throat. The appearance of the throat did not indicate acute inflammation, but the pharynx was covered with a thin, easily detached film. In each case the illness was ushered in with vomiting and slight elevation of temperature. The duration of the indisposition was only forty-eight hours. On examination of the drainage system the iron soil-pipe was found to have been recently broken at the outlet in the wall of the house, thus allowing the sewage to escape under the floor of the basement. Such a cause should always be suspected in the case of painful throats that defy the usual methods of treatment.

The Treatment of Nævus by Collodion.—At a recent meeting of the Midland Medical Society of England, MR. THOMAS showed three cases of nævi treated by the application of collodion—one in the back, another in the parotid region, and a third over the anterior fontanelle in a young infant. Collodion was painted over them and the skin in the vicinity, the applications being usually carried out by the mother. In all considerable improvement had resulted, rendering further treatment by operation unnecessary. He pointed out the absolute freedom from risk or danger, and the advantages it offered in some situations where almost all methods were unsafe.—*Birmingham Medical Review*, January, 1890.

Antiseptic Treatment of Erysipelas.—In the *Revista Clinica de los Hospitales*, December, 1889, an account is given by SENORES GANADO and DURÁN of a method which has proved highly successful in the hands of Dr. Huertas, of Madrid, in the treatment of erysipelas of the face. It consists of painting over the inflamed part with 1 : 1000 sublimate solution, followed by the application of a covering of carbolized cotton-wool; this is done twice in the twenty-four hours. In twenty cases thus treated the spread of the inflammatory process was at once checked, the zone of redness remaining exactly as it was when the case came under treatment, the disease entering on the desquamative stage on the second or third day. The authors claim that by this method the length both of the disease and of the period of convalescence was notably diminished, and that the complications frequently accompanying erysipelas were avoided. Constitutional treatment was at the same time not neglected, the *primæ viæ* being kept clear and tonics freely given. In the way of internal medication, however, most reliance seems to have been placed on the administration of Van Swieten's "liquor," a solution of corrosive sublimate in alcohol much used on the Continent. Even in cases which were admitted as late as the third or fourth day of the disease, the temperature was reduced, and the local condition speedily improved by this treatment.—*London Medical Recorder*, December 20, 1889.

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SATURDAY, FEBRUARY 1, 1890.

SCHOOL NEAR-SIGHT.

WIDELY and variously as the subject of myopia in the schools has been discussed, much remains indeterminate or contradictory, principally because of the diverse premises from which its students have started and the differing methods which they have employed; and although it is a question which concerns the Germans most especially, it is one in which every nation is really interested, since none are free from participation in it. A valuable contribution to the matter has recently been made by Professor v. Hippel, in Giessen. While reacting against the excessive outcry of some who regard the evil as ominously great and growing, v. Hippel is still among those seeking means for its prevention or diminution; and his study has special value because it deals with the practical endeavor to meet the requirements of relief, and with the results which have been thus obtained. The hygienic construction of the schoolhouse, with abundance of light and air, the subdivisions of the tasks of the day so as to afford intervals of rest and recreation, the enforcing of gymnastic exercise, the avoidance of overburdening the pupils with tasks in school, and especially with work to be done at home—these and many other matters insisted upon by the reformers would seem to have had an ideal realization in the new gymnasium of Giessen. When v. Hippel began his study of the eyes of its pupils in 1881, the new building of the gymnasium had been but two years in use, and most of the elder scholars probably showed the effects of their unsatisfactory surroundings in the old structure; only after 1883 were the improved methods of instruction in full operation, and only in 1889 had he to deal with pupils who had been through almost all of their school life under the present good hygienic conditions. A gradual lessening of the myopia in the school was, therefore, to be expected; and the result showed 27.6 per cent. in 1881, falling to 17 per cent. in 1889. This is more evident in the class percentages, which were in 1881, 0, 12.5, 15.5, 19, 36.4, 57.6, 36.7, 54.1 and 78.6; but in 1889, 1.3, 9.1, 9.5, 16.7, 21.7, 36, 21.4, 39.3 and 28.5. Myopia increased, then, from 8.5 per cent. in the lowest two to 67 per cent. in the highest two classes in 1881, from 5 per cent. to 34 per cent. in 1889. Most German gymnasia show proportions much less favorable; yet it must be noted that near-sight less than 1 D. has been left out of the count here, and would have decidedly raised the percentage.

The gain, though decided, may well seem unsatisfactory, and may appear to call in question the value of the hygienic reforms so ardently advocated in many quarters; but careful consideration of the matter will show that the limited gain is really of great importance. Thus a study of the effect of this growing near-sight upon the visual accuity of the pupils shows that in this school at least serious and irremediable decrease in vision is exceptional. With the aid of glasses few of the myopic eyes showed subnormal sharpness of sight; while the proportion and degree of such a lowered vision were greater among the hypermetropic and especially the astigmatic. Explanation of this last may be readily found in the circumstances of the investigation, and similar results would doubtless be found elsewhere. The favorable showing for the myopes of the Giessen gymnasium is in this respect probably paralleled by few of the German schools; and there is good reason to believe that its good hygiene deserves much of the credit.

Another side of the picture is shown by the history of the limited number of pupils who were followed through any considerable part of their gymnasium course. Only 44 were followed for nine years and 40 for eight years; these showed the development of myopia in 26.4 and 21.2 per cent., respectively, of the non-myopic eyes; and increase of the degree

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of myopia took place in almost all of those previously myopic. How much of this may fairly be ascribed to the exacting work of the school, how much to heredity (of which evidence was obtained in about 50 per cent.), it is not possible to say; but one point incidentally given deserves careful consideration. In spite of warnings given by the examiner and reiterated by the teachers as to the injurious influence of improper glasses, and the pointing out and condemning of such when found, his last examination showed that but one-fourth of the myopes were wearing proper glasses, half of them were wearing none, although their use had been advised, while the remaining fourth had improper ones. In Philadelphia, where the multitude, especially of children, wearing glasses is rather striking and is apt to raise the question whether the prescribing of glasses by oculists is not overdone, it is noteworthy that cases of the "progressive myopia," so much noted abroad, are decidedly rare—thanks probably to the use of mydriatics and to scrupulous accuracy in the correcting of refraction errors.

The two conclusions which v. Hippel draws seem worthy of careful consideration:

"In spite of the best architectural construction and appropriate arrangement of a schoolhouse; in spite of the avoidance of all overburdening of the pupils, and in spite of regular medical supervision, a notable proportion of the pupils will become near-sighted during the school period, and the near-sight present will increase in another portion."

"By following correct hygienic principles in the external conditions of the school and in the organization of the instruction, the frequency of near-sight may be considerably diminished, its grade may in the great majority of cases be kept within moderate limits, and diminution of the sharpness of sight largely avoided, while the occurrence of the usual complications of myopia, staphyloma posticam and spasm of accommodation, will be less frequent than they are otherwise apt to be."

REVIEWS.

ESTUDIOS SOBRE TERMOMETRIA CLINICA. (STUDIES ON CLINICAL THERMOMETRY.) By FERNANDO ESCOVAR, M.D. 8vo., pp. 55. Mexico: Ricardo Sainz, 1888.

DR. ESCOVAR has given in his little work a full account of clinical studies of the febrile changes of certain diseases, such as measles, typhoid fever, intermittent fever of the quotidian type, pneumonia, pyæmia, and erysipelas. Dr. Escovar does not pretend, in this part of his paper, to give or suggest anything new; he simply writes about his clinical observations, some of them being very interesting, and all, we may say, corroborative of those of other investigators. But the most interesting portion of his essay is the one in which he gives an account of the original studies he has made on the temperature of the neck of the uterus and vagina and of the male urethra in certain disorders of the genito-urinary apparatus.

He made 153 observations with regard to the temperature of the neck of the uterus and the vagina, and found that in 46 women, aged from twenty-eight to forty years, who suffered from simple hypertrophy of the neck of the uterus, the temperature at this place was identical with that of the vagina, namely, 37.5° C. In 22 cases of granular metritis of the neck, the local temperature was 37.4° C., and that of the vagina 37.3° C. In 28 cases of uterine catarrh the temperature of the neck was 37.3°; of the vagina, 37.2°. In 57 cases of atresia of the neck the temperature was 37.2° in vagina and uterus.

He also made 320 observations of the temperature of the male urethra as follows: In 145 cases of blenorrhœa and stricture, the thermometer marked at the region mentioned 36.1° C. In 92 cases of blenorrhagia, in the first period, the temperature of the urethra was 37.4°. In 82 adults, between thirty-five and forty-five years of age, who suffered from spermatorrhœa and impotence, the urethral temperature was 35.5°, and it is to be noticed that in 6 of these cases, who suffered at the same time from migraine, the thermometer only marked 34° C.

From these studies Dr. Escovar arrives at the following conclusions:

1. There is but little variation in the temperature of the male urethra, or of the neck of the uterus and vagina, in states of disease.

2. The pathological conditions under consideration do not influence, in any marked degree, normal temperature.

The pamphlet is interesting, especially as regards the latter part of Dr. Escovar's studies in a field which, so far as we know, no one has as yet worked carefully.

CORRESPONDENCE.

LISTER'S NEW DRESSING.

To the Editor of THE MEDICAL NEWS,

SIR: A few weeks ago you published an abstract of a clinical lecture delivered at the University Hospital on "The Latest Listerian Method,"—the double cyanide dressing as used by Sir Joseph Lister—my remarks having been based on an experience of a few months. As a more extended use of the dressing still further convinced me of its great efficacy, and as I knew that Lister was constantly endeavoring to improve the details of his methods, I wrote him to ask if he had made any changes in this direction or in his method of preparing the gauze since he had explained them to me in July of last year. The accompanying letter which I have just received in reply should be read in conjunction with the papers in *The Lancet* to which he refers. It was not intended for publication, but I venture to send it to you (with the omission of a personal paragraph), as

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I am sure all practical surgeons in this country are interested in knowing the most recent views on antiseptic methods of the man who has not only revolutionized the principles of wound treatment, but is now devoting himself with unremitting labor to the elaboration and perfection of its details. Yours truly,

J. WILLIAM WHITE.

1810 S. RITTENHOUSE SQUARE, PHILA.

LYME REGIS, DORSET, January 7, 1890.

MY DEAR PROFESSOR WHITE: I have to ask your forgiveness for having so long delayed answering your inquiries regarding our antiseptic methods.

The papers which I have lately published on the cyanide dressing (see *The Lancet* of November 9, 1889, and January 4th of this year) will both supply the answer to some of your questions, and serve also to explain the difficulty I have had in finding time for correspondence. I felt it urgently incumbent upon me to publish the cyanide dressing; but, at the same time, I was very anxious to produce it in as useful a form as possible, and the labor connected with the successive improvements that suggested themselves was more than enough to occupy any spare time at my disposal. The preparation of the gauze will now present no difficulty if you obtain from Messrs. Morson, Southampton Row, London, W. C., the *dyed cyanide*, and follow the instructions given at the end of my second paper.

You will observe that the gauze, after being drawn through the liquid in which the cyanide is diffused, is hung up to drain until it ceases to drip, and then is placed in a folded sheet to remove the still redundant moisture. The precise time for which it remains in the sheet is a matter of no material moment; about half an hour being adequate to leave the gauze moist without being inconveniently wet. Immediately over the wound is placed a portion of the gauze, say about sixteen layers thick, washed in a solution of carbolic acid to get rid of the bichloride of mercury in the dressing in contact with the wound. I prefer for this purpose one part of carbolic acid to twenty of water, as safer than any weaker solution.

A very pure acid should be used, because, if impure, it is not completely dissolved, and the undissolved particles are needlessly irritating to the surgeon's hands. When you change a dressing you apply this piece of gauze over the wound before you proceed to clean surrounding parts with the carbolic lotion.

The carbolic acid soon flies off from the washed gauze, leaving nothing in it in contact with the wound but the unirritating cyanide.

By proceeding in this way I have not found it necessary to use "protective." As to the amount of unwashed gauze to be applied, that will depend upon the amount of discharge that you anticipate.

In the early stage of a wound, where you expect much sero-sanguineous oozing, it is desirable to use a considerable mass, say an inch in thickness, and extending well on all sides beyond the wound. Further, it is well, where free discharge may occur, to place over the dressing a piece of thin mackintosh with the caoutchouc side (antiseptically washed) next the dressing. This is for the purpose of preventing the discharge from coming directly through the dressing. It does not, of course, overlap the gauze, nor need it even extend to its edge. Where the part operated on is placed on a splint, as after resection of the knee, the padding of the splint is lined with such a piece of mackintosh.

It is unnecessary to purify bandages or elastic bands that are placed outside of dressings, but if a bandage is used in the interior of a dressing, as in bandaging a stump next the skin, it is purified sufficiently by soaking it thoroughly with a solution of corrosive sublimate 1 : 2000. For purifying the skin I use water containing both 1-20 part of carbolic acid and 1-500 part of corrosive sublimate (*i. e.*, both combined). Or, in private practice, I commonly first wash thoroughly with 1 : 20 carbolic acid solution, and follow it up by washing with 1 : 500 corrosive sublimate lotion.

The towels placed around about the seat of operation are wrung out of 1 : 2000 sublimate lotion, and this is also used for the sponges during the operation. At other times the sponges, after being well washed in water, are kept in 1 : 20 carbolic solution.

The carbolic solution is also used for purifying the instruments before an operation. At the end of an operation, before beginning to stitch, I generally wash the wound with 1 : 500 sublimate lotion, and irrigate with 1 : 4000 during the stitching.

But where I open into a joint, such as the knee, I avoid the use of the strong sublimate solution, which is seriously irritating to the synovial membrane; and in that case I have irrigation during the whole operation with 1 : 4000. As to rendering wounds aseptic which have been infected, that is, speaking generally, a thing on which you can never reckon; in recent wounds, like compound fractures, the chance of success is, of course, always greater the shorter the time that has elapsed after the infliction of the injury.

If the skin and wound are greasy, oil of turpentine is of great value for cleaning away the greasy dirt, and the use of a nail-brush with carbolic and sublimate solutions, after the turpentine (or without it if there be no special occasion for its use), is very valuable. In most cases where septic sinuses are present, it is simply hopeless to try to extirpate the septic mischief; but very great advantage is gained by washing the cut surfaces in an operation under such circumstances with solution of chloride of zinc, forty grains to the ounce of water. This is done once for all at the conclusion of the operation, and prevents putrefaction during the critical early days after the operation. The same solution is also used where the wound communicates with a septic cavity, as after the removal of a portion of the tongue, or of a jaw; and under these circumstances it is also useful to apply iodoform to the cut surface after the chloride. In cases in which the septically infected part is of very limited extent, as, for example, where a suppurating strumous gland has discharged without an antiseptic dressing, complete disinfection may often be obtained by applying undiluted liquid carbolic acid, after scraping away the degenerated gland (or other) tissue with a sharp spoon.

. . . . . Please accept my kind regards, and believe me Very sincerely yours.

JOSEPH LISTER.

Recent Mortality in New York.—It is stated that in one day there were thirty deaths in the New York hospitals that were certified to be due to epidemic influenza and its sequels.

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NEWS ITEMS.

A Posthumous Essay of Volkmann's.—The Berlin correspondent of the *Lancet* states that Professor Richard von Volkmann left behind him, almost ready for the press, an essay on cancer, which will be published soon by Dr. Fedor Krause, who was his assistant for many years. Volkmann ordered in his will that none of the numerous other medical and poetical writings which he left behind him should be printed.

A Promotion.—Dr. Thomas D. Ingram, formerly of Philadelphia, has been promoted to the position of Medical Referee in the Bureau of Pensions, in the place of the late Dr. Charles Macmillan. Dr. Ingram has hitherto held the office of Assistant Medical Referee.

A German Society for the Study of Hypnotism.—A society, chiefly composed of physicians, has been organized at Berlin, Germany, for the cultivation of experimental psychology, but at present it is mainly devoted to the study of hypnotism, The society was established in January, 1888, and has for its Secretary Dr. Max Dessoir, of Berlin.

The Treatment of the Insane in Canada.—It is not generally known that Canada, as well as the United States, has suffered from the meddling of politicians in the treatment of the insane. The Montreal *Medical Journal* shows the unfortunate fact that in that country it is not the custom to appoint men to the position of superintendent because they are fitted for the work by education or experience: "In most of the provinces the first, and in fact the only, qualification is the reputation of being an energetic machine politician. To be a rejected parliamentary candidate is a qualification which rarely fails in securing the desired position." A position of this kind must presently be filled in Montreal, at the new Protestant Hospital for the Insane, and the Montreal *Journal* very properly enters its protest agatnst the appointment of any one who has not had a special training in psychiatry. That *Journal* also takes occasion to remind the medical profession that the insane of the Northwest Territories are housed, not in an asylum or hospital, but in the Manitoba Penitentiary. The duty of correcting this evil devolves in part upon the Canadian Medical Association, in that a strong statement of the case by that Association would, without doubt, impel the government to build an asylum in the Territories, or to have the insane intrusted to the Manitoba Asylum at Selkirk. This latter method was at one time satisfactorily employed, but the authorities of the two provinces could not continue in agreement as to the price that the one should pay the other for the board and treatment of their lunatics, and so those unfortunates were ordered to be lodged at a penal institution. Concerning the governmental system in the Province of Quebec, there is a steadfast adherence to the antiquated and pernicious system of hiring out the insane, and there is no prospect of a reformation during the present generation. The status of the popular ignorance and a corresponding lack of intelligence among the popular representatives maintain "the unrighteous method" in the same force and esteem as in generations that are past.

Sixty-one Years in Medical Practice.—The oldest living graduate of the Medical Department of the University of Pennsylvania is said to be Dr. I. L. Coffman, of Phœnixville, Pa., who has been practising medicine sixty-one years.

The Alumni of the Woman's Hospital of New York.—The annual meeting of the Alumni Association of the Woman's Hospital of New York, was held at the building of the Academy of Medicine on January 16th. Afterward, the Association was entertained at dinner at the Hotel Cambridge by Dr. B. McE. Emmet. Among the guests, not members of the Association, who were present, were Dr. Fordyce Barker, President of the Hospital Board; Dr. Keith, of Edinburgh, Scotland, and Dr. T. G. Thomas. The afternoon session was devoted to scientific work. In the evening, Dr. T. Addis Emmet gave a reception to the Association at his home.

The British Medical Association.—The fifty-eighth annual convention of the British Medical Association will be held at Birmingham, during the last week in August, under the presidency of Dr. Willoughby F. Wade, senior physician to the General Hospital of that city, The Town Hall, Queen's College, and Mason College have been secured for the purposes of the sessions. The local committee on entertainment have their plans already laid for numerous excursions, and the customary evening receptions and amusements for the members.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 21 TO JANUARY 27, 1890.

SPENCER, WILLIAM G., *Captain and Assistant Surgeon* (Fort Bridger, Wyoming Territory).—Is hereby granted leave of absence for one month.—Par. 1, *S O. 4, Department of the Platte*, January 20, 1890.

By direction of the Secretary of War, the extension of leave of absence granted CHARLES S. BLACK, *Captain and Assistant Surgeon*, in Special Order No. 1, Department of the Platte, January 1, 1890, is still further extended to include April 30, 1890.

The resignation of Charles S. Black, Captain and Assistant Surgeon, has been accepted by the President, to take effect April 30, 1890.—Par. 1, *S. O. 18, A. G. O.*, January 22, 1890.

By direction of the President, the Army Retiring Board appointed by War Department Order dated January 8, 1890, from Headquarters of the Army, to meet at Los Angeles, California, will meet for the examination of LEONARD Y. LORING, *Major and Surgeon*, at San Diego, California.—*S. O. 18, A. G. O.*, January 22, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING JANUARY 25, 1890.

BERRYHILL, T. A., *Assistant Surgeon.*—Ordered to examination preliminary to promotion.

WENTWORTH, A. R., *Assistant Surgeon.*—Ordered to examination preliminary to promotion.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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THE MEDICAL NEWS.

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VOL. LVI. SATURDAY, FEBRUARY 8, 1890. NO 6.

ORIGINAL LECTURES.

EPIDEMIC INFLUENZA OR CATARRHAL FEVER.

Abstract of a Clinical Lecture delivered at the Hospital of the University of Pennsylvania, January 16, 1890.

BY JAMES TYSON, M.D.,
PROFESSOR OF CLINICAL MEDICINE.

THE very general prevalence of an epidemic of influenza at this time, as well as the presence of numerous cases in our wards, renders appropriate some consideration of this disease. We are all familiar with sporadic cases characterized by coryza, watery eyes, pain in the brows, sometimes exceedingly severe, but generally relieved by a free purulent discharge from the nose, substituting the primary watery one. With these symptoms are often associated great muscular pain throughout the body, a certain amount of febrile movement, and sometimes cough. The whole attack lasts from three to five days, and is commonly called influenza, or "bad cold in the head." Now, what is the difference between this condition and the cases of epidemic influenza or catarrhal fever now prevailing? The same symptoms are found, with varying constancy and severity. More frequently, however, than in sporadic influenza do we have catarrhal symptoms of the respiratory passages involving the larynx, trachea, the bronchi, and, more rarely, the ultimate structure of the lungs as a pneumonia.

In the first place, epidemic influenza differs in being due to a specific cause, whereas the ordinary influenza is generally produced by exposure to cold, or by irritating matters reaching the seats involved. As the result of a specific cause the disease becomes at once "infectious." "Infectious" is a word which must be carefully distinguished from "contagious." You will remember that all contagious diseases are infectious, but not all infectious diseases are contagious. The idea of "contagion" involves that the specific cause should be derived from another person having the same disease as contrasted with "miasm," a specific cause which originates outside the organism. Now, although in consequence of the very rapid spread of epidemic influenza one is forced to ask whether it is not contagious, I am inclined with most others to place it in the second category of infectious diseases, the "miasmatic." Modern bacteriological studies have eliminated from a once long list of miasmatic diseases one after another, until malarial fever and, perhaps, yellow fever, are left alone, unless we add to the category influenza.

Beyond the somewhat fantastic ideas announced some time ago by Saulsbury, no claim of isolation has as yet been made for the germ of influenza. It is to be hoped that the abundant opportunity afforded by the prevailing epidemic will have been taken advantage of by bacteriologists, and some definite conclusions arrived at.

The course of the cases of influenza in the present epidemic may, in general, be characterized as mild, the apparently large number of serious cases being proportionately small. Some important facts have been added to our knowledge of the disease, or, at any rate, brought afresh to our minds. The experience of almost every one has shown that the victim who yields most promptly to the disease, and goes to bed, or, at least, houses himself, is almost sure to be well in three, four, or five days. It is possible, however, for one attacked to fight off the disease without losing a day's time. But woe unto him who fails in this attempt, and as the result of taking cold, or from other cause, is forced to give up. He is either compelled to take to his bed from extreme prostration, or he suffers a relapse of the symptoms of the respiratory organs, which may extend to any depths. The prostration associated with epidemic influenza, or, at least, the present epidemic, is something peculiar. The weakness is extreme, and the slightest effort at exertion, physical or mental, promptly convinces the victim of this. The duration of the weakness is apt to be prolonged unduly, a week, or even two weeks, being required to overcome it. The recurrent pulmonary symptoms, if confined to the larger air tubes, do not give serious trouble, but if the air vesicles become invaded, the case is much more grave. A pneumonia thus occurring, is apt to be ushered in with a chill, and extends rapidly to the whole of one lung, and even to both lungs. When a part of the primary attack the pneumonia is more apt to be catarrhal and circumscribed, creeping from the bronchi into the air vesicles, and is less serious, although it may also be fatal, particularly in old persons. More rarely the inflammation is confined to the fine bronchial tubes, and we have the physical signs of a capillary bronchitis.

Another symptom which requires consideration, is the temperature. It is not commonly very high at the beginning, although I have known it to be 106.2° at the first observation in a patient now convalescent in our wards. More frequently it does not exceed 103° at the highest, and is often but slightly above the normal. The patient alluded to had been walking about with the disease up to the time of his admission. During convalescence the temperature is apt to become subnormal, falling as low as 96°, and in this patient there was a fall in four days from 106.2° to 96°. The explanation of the lowered temperature can only be had on the ground of a lowered vitality, which is also responsible for the weakness.

Another important fact in connection with epidemic influenza is this, that its presence is apt to make more serious other diseases which may occur during its prevalence. This is especially true of pneumonia, instances of which are sometimes undoubtedly regarded as secondary to influenza, when they are really primary cases. That they are signally fatal, has been amply attested by

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the numerous cases which have occurred recently among us.

The *treatment* in the majority of cases is very simple. Rest in bed, without medicine, answers for a large number. Beyond this the treatment is mainly symptomatic, antipyrin for the pains when present, and quinine to keep up the strength. In ordinary cases requiring such treatment, I am in the habit of giving five grains of antipyrin every four hours, alternating with two grains of quinine as often, omitting the former when the pain has disappeared, but continuing the quinine. When the pains are very severe the antipyrin may be given more frequently, and even in larger doses. I have found it necessary also to give as much as eighteen grains of quinine daily. The cough is admirably treated with turpentine stupes, and when there are positive laryngeal symptoms, "Dobell's solution" sprayed into the larynx is very useful. It may also be sprayed into the nasal passages, or cocaine may be similarly used. Where the cough is disturbing, I have found ammonium chloride in six-grain doses, with fifteen minims of syrup of squills, and two drachms of compound licorice mixture sufficient to answer the purpose. Opium may be given in large doses if required. For the prostration, supporting measures are necessary, and even stimulants may be called for. The entire absence of appetite, and the complaint that all things taste alike, are to be ignored, and the patient must be forced to take food, which must be made as attractive as possible.

What shall we do for the pneumonia which becomes often so grave a complication? In a few cases it is a true "pneumonia fulminans"—strikes the patient down so suddenly and violently as to make all treatment unavailing. In other cases the physician reaches the patient when the disease is so advanced that depleting treatment of any kind is contra-indicated by weakness. Whether a bleeding immediately after the violent chill—even before the physical signs of a pneumonia have manifested themselves—would be of service, I have not had the opportunity of determining; but I am sure that some of my country friends would say that to omit it would be culpable. All depleting measures should be restricted to the first or, at the latest, to the beginning of the second stage of pneumonia where there are engorged vessels and more or less patulous air-vesicles. In the second stage the bloodvessels are already beginning to be compressed, and with the establishment of the second stage the lung is nearly anæmic, the distended air-vesicles compressing the bloodvessels through which the heart is trying to pump the blood. In the first stage, too, when the pulse is full and strong, veratrum viride may be used, as it quiets the heart, while it opens up the capillaries throughout the system and allows the lungs to empty themselves of the surplus blood. To use the expression of my colleague, Dr. Wood, concerning veratrum viride, you bleed the patient into his own abdominal vessels, and thus depress, while you do not exhaust him. In the second and third stages stimulants are indicated, and especially digitalis in full doses, to aid the heart in its difficult work. This should be given in doses sufficient to affect the pulse, and this effect should be kept up. Dry cupping and blistering are, in my judgment, never out of place in pneumonia, for they can do no harm, if they do no good. They should be followed by a jacket of wool, by which warmth and uniform temperature are kept up.

Beyond this there is little to be done, although an emergency may be tided over by the hypodermic use of digitalis, or of the same drug combined with ether. Under such circumstances fifteen minims of tincture of digitalis may be drawn into the syringe and the rest of the barrel filled with ether, and the mixture injected. Both may be repeated separately or conjointly.

Let me say to you, in conclusion, that one need not wait for the physical signs of a pneumonia to present themselves before beginning the treatment. Given a chill after exposure, with no other cause to explain it, and you may consider a pneumonia as almost inevitable. Oftentimes a pneumonic focus in the centre of a lung does not furnish any physical signs, while to wait until it approaches the surface causes a delay in the treatment which may be fatal.

A rarer complication of epidemic influenza than pneumonia—one, however, which our wards illustrate in a typical manner at present—is pericarditis. Our patient, a man of thirty-eight, had a simple attack of influenza, from which he was decidedly convalescent, when suddenly there appeared, coincident with a rise in temperature from 99° to 101.2°, an evident pericardial friction murmur, to and fro, rough, rasping, and superficial in character, loudest to the left of the mid-sternal line, but loud also at the apex. It was not heard at the base, nor conducted into the axilla. There was evident enlargement of the cardiac area of dulness. A blister was applied, and the next morning the sound had already grown less loud. There was also some pleurisy in the same case. The termination is not always so favorable. A case has occurred in one of our hospitals in which the pericardium was tapped, a purulent fluid removed, and a drainage tube inserted.

ORIGINAL ARTICLES.

A FAILURE IN BRAIN SURGERY.

BY HAL C. WYMAN, M.D.,

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF SURGERY IN THE MICHIGAN COLLEGE OF MEDICINE AND SURGERY, DETROIT.

JAMES H., a rugged and robust young farmer; father of one child. About a year ago, while digging in the field, he was suddenly attacked with pain in the back of the head. At first supposing it to be merely an ordinary headache, he went to the house and bathed his head with cold water, but the pain continuing severe, he consulted a physician four miles distant, returned home, took the medicine as directed, and was considerably relieved of his suffering. The following day he did not feel strong enough to work, and sent for the physician, who diagnosed malarial fever. The attack lasted about six weeks, during which time he suffered more or less from pain in the head. Becoming dissatisfied with his medical attendant, he sought other advice, which confirmed the original diagnosis of malaria. He took many drugs, but experienced no marked relief from the pain. About four months after the beginning of the attack, he found that his eyesight was failing. He also suffered from nausea and his sleep was disturbed. He vomited a great deal, although the

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attacks of vomiting would not come on until some time after taking food, so that he did not lose flesh rapidly. Pain in the frontal region continued persistently. He was then placed upon potassium iodide. This drug for a time seemed to make some impression on his sufferings, and under its influence he was able to secure a few hours' sleep. However, after a few days its effects passed entirely away, and the pain returned with renewed vigor and intensity. He became still more restless and sleepless, vomited more frequently, the symptoms finally culminating in an epileptic seizure. Following this attack of epilepsy, he had divergent squint and additional convulsions, with marked muscular weakness and some fever.

Drugs of every sort were tried in vain, the pain continuing.

Dr. Mere, at my request, made an ophthalmoscopic examination of the eyes and found the condition of the retina indicating pressure upon the optic tract.

Operation.—The man became blind or partially blind within a few weeks after the attack of headache. He had had almost no unilateral symptoms, and had but slight movements of rotation, and at times great muscular weakness. These facts led me to locate the disease in the neighborhood of the sella Turcica and in the cerebral ventricle. Therefore, I trephined the frontal bone just above the supra-orbital ridge on the right side. One button of bone was removed, and through the opening the membranes were incised. First, however, the dura mater was raised and a probe pushed along the orbital plate of the frontal bone in the direction of the optic commissure. Then the finger was introduced and the parts carefully explored, but no tumor or abnormality being detected, a small director was pushed cautiously through the anterior lobe of the right cerebrum in the direction of the anterior horn of the right lateral ventricle. But little fluid was evacuated, owing to the brain-substance choking up the instrument. No sensation as of the point of the director free in a cavity was observed. During the administration of the anæsthetic the patient nearly died from failure of respiration. His respiration resembled the Cheyne-Stokes respiration in that his breathing was at times very rapid and then slow. The opening was made at the position designated because the symptoms pointed to disease in the neighborhood of the optic commissure and crura cerebri, and to effusion into the ventricles. A brief recapitulation of the morbid phenomena presented by the case may serve to make clearer my reasons for operating. Pain, quite uniform in quantity and character; fever, of several weeks' duration, immediately after the attack of pain; impairment of sight in both eyes, varying at times in degree; nausea; movements of rotation quite indistinct in the history; general impairment of strength not unilateral. No incoördination; disturbance of sleep variable; copious nasal discharge and impairment of sense of smell. These led me to think that there was effusion into the ventricles, with disease near the optic commissure and crura cerebri which might be removed by an operation of the kind described. The operation was made in the amphitheatre of the Detroit Emergency Hospital in the presence of the students of the Michigan College of Medicine. Thorough cleanliness was observed in every detail of the work, and the autopsy revealed no evidences of wound infection.

Autopsy.—Body moderately emaciated. Wound crescent-shaped on right forehead beginning near the external angle of the orbit, ranging upward and toward the median line of the face until the root of the scalp is reached, then descending to a point midway between the eyebrows. It was closed with nine interrupted sutures and had a plastic exudate between its surfaces.

The general appearance of the body suggested a man of moderately strong physique. His head was well shaped. On removing the calvarium the dura mater was adherent by numerous Pacchionian bodies which had in several places almost perforated the bone. A wound about three-fourths of an inch in length was found in the dura mater over the anterior lobe of the right hemisphere, which corresponded to a hole in the right frontal bone made by the crown of a trephine. Incising the dura and the attachment of the falx cerebri to the crista galli, they were turned back so that the arachnoid and pia mater were exposed. Much fluid was present in the subarachnoid space. There was some ecchymosis of the arachnoid and pia mater near where the dura mater had been divided at the time the bone was trephined. There were also present on the surface of the pia some particles of brain-tissue about the size of grains of wheat.

The membranes were entirely removed, and with a sharp knife a section was made through the right cerebrum on a level with the corpus callosum. This opened the right cerebral ventricle and allowed several ounces of fluid to escape. The left ventricle was opened in the same way, and was found distended with fluid. The third ventricle was then opened by cutting through the corpus callosum and fornix, and was found distended with fluid. The *iter e tertio ad quartum ventriculum* was distended with fluid, so that it easily admitted a lead-pencil into the fourth ventricle. No other changes in the cerebrum were observed, except the shallowness of the spaces between the convolutions. The membranes were now removed and the cerebrum turned back to expose the optic commissure and the tentorium cerebelli, which was divided so that the crura cerebri, pons Varolii, and medulla oblongata could be easily examined. Nothing abnormal was

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noticed, except the excess of cerebro-spinal fluid. The optic nerves and commissure were normal. The spinal cord was divided after cutting the cranial nerves, and the entire brain was turned out of the skull. The cerebellum, pons, and medulla appeared normal at first, but looking more carefully at the cerebellum that organ was found to differ markedly in the appearance of its right and left hemispheres. The left hemisphere had a swollen appearance and a peculiar elastic feel which did not exist in the right hemisphere. A cut was made into it to demonstrate the arbor vitæ, when about an ounce of fluid ran out. Separating the cut surfaces, a cavity was found to have been divided which measured one-half inch in one diameter and one inch in another. Within this cavity, which was walled entirely with medullary matter, not a point or streak of gray showing at any point, a tumor oval in shape was found. It was about three-fourths of an inch in its long diameter, and was attached to one side of the cavity by a thick, short pedicle.

REMARKS UPON EMPYEMA.[1]

BY MARY PUTNAM JACOBI, M.D.,
OF NEW YORK.

(Continued from page 122.)

THE little boy, whose case forms the text of this paper, as soon as the diagnosis of empyema had been confirmed by the hypodermic syringe, was etherized, laid upon the affected side, and an incision made in the eighth intercostal space in the posterior axillary line. The operation was rendered a little more difficult by the position given to the child. But this inconvenience was held to be compensated by the advantage of securing to the sound lung entire freedom from compression. The incision through the skin was a little less than an inch in length, and was made layer by layer until the pleura was nearly reached, when a trocar was plunged in, and its opening subsequently enlarged until it would admit a drainage-tube the size of my finger. This could just be squeezed through the space between the ribs, which, as always in a young child, was narrow.

On account of this narrowness, which has frequently been recognized as a source of difficulty, it did not seem that anything would be gained by making a longer incision, unless, as in Dr. Cabot's method, two drainage-tubes were to be inserted.

The size of the opening which should be made in the chest, in order to evacuate a purulent effusion, has been the subject of animated controversy.

It seems scarcely necessary to reopen the discussion in regard to aspiration of the chest in empyema. The discussion of the New York Academy of Medicine, held in 1887, resulted in the unequivocal condemnation of aspiration for purulent effusion, and in the recommendation of antiseptic incision as a method which, as Dr. Holt remarked, has changed empyema in children from being one of the most fatal to one of the most amenable of diseases. But it is both interesting and surprising to note how very recently this method has been definitely acquired. Guibert, in 1875,[1] relates with complacency the case of a boy of eleven, under treatment for nine months, and subjected to seventy-four punctures with Dieulafoy's aspirator. In 1862 Ziemssen, quoted by Schenks, said that operation was rarely needed for empyema in children. In the great majority of cases in which aspiration has been tried, the continued recurrence and aggravation of all morbid conditions decided the physicians to resort to incision, with drainage. Dr. Holt has collected 121 cases treated by aspiration, of which 6 died; 23, or nineteen per cent., were cured; the rest came to treatment by incision. Yet in the International Congress of 1881, although Ranke and Gerhardt advocated free incision, Baginsky advised delay, to see if the pus might not be removed by expectoration. Robert Lee and Parker, of London, advocated repeated aspiration, and Dr. Jacobi reported three cases of empyema in children, observed in one year, who had been radically cured by aspiration.[2]

Some years ago I treated by aspiration a case of empyema in a child of eighteen months, and the child died.[3] The dangers of aspiration are not

[1] Read before the New York Academy of Medicine, Section on Pædiatrics, November, 1889.

[1] Lyon Médical, November, 1875, quoted by Bouveret.

[2] Esch, N. Y. Med. Record, 1887, relates a case of empyema in a boy eight years old. Twelve ounces of pus were withdrawn from the pleura by aspiration, and, after a temporary improvement, the refilling of the chest necessitated repetition of the aspiration seven times in the course of a few weeks. Each time, eight to fourteen ounces of pus were withdrawn. The child had chills, and a temperature ranging from 102° to 104°. Finally, Esch injected through the aspirating needle eight ounces of a two per cent. solution of biborate of soda, and withdrew in ten minutes. Speedy recovery.

Leichtenstern, in Gerhardt's Cyclopædia, says that it is unquestionable that empyema *may* be cured by repeated puncture and aspiration, like any other abscess. In 1871, Bouchert (Gaz. des Hôp., 1871) proposed to treat infantile empyema exclusively by this method.

Branthomme's thesis contains eighteen cases cured by single aspiration.

Bouveret quotes forty-three from the thesis of Branthomme, divided into four groups. In the first group of 18 cases, a single aspiration sufficed to cure. In the second group of 11 cases, the aspiration was practised twice—the recovery equally prompt. In the third group of 3 cases, there were three aspirations, and speedy recovery. Finally, in a fourth group of 11 cases the number of aspirations ranged from 6 to 122.

[3] Schenker (Jahrb. für kinderheilk., N. F., 1883, Bd. xx.) relates fifteen cases, of which six were treated at first by aspiration. Of these one died after a second aspiration. The others were treated by incision and drainage.

Goodhart (Guy's Hosp. Rep., 1877) reports two cases of aspiration, both of whom died.

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purely negative and dependent on delay in relieving the organism of its collection of pus, and lungs and heart of the mechanical impediments offered to their functions; but, unless the disinfection of the aspirating needle is perfect, and it often is not, there is the same danger in plunging it into a closed pleural effusion as has been so often noted in the hypodermic exploration or aspiration of abdominal cysts, and of which I have myself reported two observations. If germs are carried into a cavity with a free opening, and from which a current of fluid is constantly flowing, they have at least a large proportion of chances of being washed away. But, introduced into an hermetically closed cavity, no such chance is offered, and infection is unavoidable. This danger does not seem to have been emphasized by authorities as distinctly as the fact of the almost inevitable recurrence of the effusion after the most complete aspiration, and the great probability that the aspiration in every case must remain incomplete. Other more exceptional dangers of aspiration, empyema shares in common with serous effusions; the dangers of albuminous expectoration, pulmonary œdema, and other accidents liable to occur when a lung, bound down by adhesions, is drawn upon by a powerful aspirating machine. These dangers are, of course, more rare in children, precisely because in them the lung is usually movable. The prejudice in favor of aspiration dates from the epoch when incisions were made without any antiseptic precautions. We now know that many of the dangers then attributed to the introduction of air were really due to infection of the wound or of the suppurating cavity. But it is again surprising how recent is this discovery, and indeed how long a time elapsed after the establishment of the Lister method elsewhere, before it was applied to the treatment of empyema: according to Bouveret,[1] the very first case in which pleurotomy was performed for empyema with antiseptic precautions occurred in Calcutta, under the care of an English surgeon, Ewart, and was reported by him in 1873.[2] In 1877, Goodhart speaks despairingly of the conflict of opinion in regard to the treatment of empyema; says that the incision treatment gives a mortality of 33 per cent., and is not more favorable than Playfair's method of subaqueous drainage. "This," he observes, "is simplicity itself, and looks, at first sight, almost perfect. I do not know that even now I am prepared to say that any other method of treating empyema is better, but, after treating several cases and seeing others treated, I think if no other treatment can be made to give better results than it, empyema will remain a most fatal disease, with the chances for or against the patient's life about even."[3]

[1] Traité de l'Empyème, 1888, Paris et Lyon.
[2] Lancet, 1873. [3] Loc. cit.

In 1880, Dr. Cabot commented on the slow progress made by the antiseptic method in regard to the treatment of empyema, and attributed it in part to the tenacious belief of physicians that in aspiration they have a means of curing the patient with less risk, hence do not trouble themselves to master the methods by which incision may be stripped of its risks. At this date Dr. Cabot could find reports of but ten cases treated antiseptically, all in German; namely, four by Wagner,[1] four by Goeschel,[2] and two by Krabbel.

To-day, the cases of antiseptic pleurotomy have multiplied so considerably, that it would be useless to quote them in a paper like the present. I will again, therefore, simply refer to Dr. Holt's statistics of 63 cases, with 61 recoveries and 2 deaths. The statistics of Cabot and Eddison, reproduced in 1888 by Bouveret, of 40 cases of non-tuberculous empyema in adults, give 34 complete cures, 2 permanent fistulæ and 4 deaths.[3] The case which forms the basis of this paper is the sixth I have treated, and with success. My friend Dr. Annie Daniel also reports six cases where antiseptic drainage treatment was followed by complete recovery. There can be no doubt, therefore, that the pendulum of chances has swung over so considerably during the last decade, that, with incision and drainage treatment, recovery of children from empyema should be considered the rule—death the exception.

There are, however, four details of the treatment that are not so well settled. These are, the use of the spray, the size of the opening to be made in the chest wall, if puncture and aspiration be excluded; the employment of irrigations, and the use of a valve in the dressing. When, in 1873, far away in Calcutta, the antiseptic method was, as it would appear, first applied to the empyema operation, the incision and subsequent dressings were rigorously guarded by the spray. For a long time the spray was considered indispensable; and as late as 1888, Bouveret, while admitting the superfluity of the spray for other surgical operations, insists upon re-

[1] Volkmann's klinische Sammlung, No. 197. Also Berlin. klin. Wochen., 1878.
[2] Berlin. klin. Wochen., 1878.
[3] Among reported cases of successful pleurotomy may be cited:
Goeschel: Loc. cit., four cases, four recoveries (young children).
Phelps (N. Y. Record, 1880): fourteen mixed cases, eleven recoveries, three deaths.
Lindner: Jahrb. für kinderkrank., N. F., Bd. xvii., one case recovered—seven months' child.
Skerritt (Brit. Med. Journ., 1876): one case, recovered.
Cabot (N. Y. Med. Journ, 1880): seven cases, children, all recovered rapidly.
Redenbacher (Deutsch. Archiv. für klin. Medicin, Bd. ix.): one case, recovery in fourteen days.
Huber (Archives of Pædiatrics, Nov. 1889): two cases, double empyema, recovery.

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taining it in treatment of empyema. The spray was used by Skerritt[1] in 1876, by Koenig and Wagner in 1878,[2] but the latter does not consider it necessary, and the former claims always to resect a rib. The spray is uniformly advised by Douglas Powell,[3] and by Bennett in Ashhurst's *Cyclopædia of Surgery*. It was strenuously insisted upon by Dr. Cabot in 1880,[4] by Leamoine in 1880, and is advised by Donaldson, writing in Pepper's *System of Medicine*, whenever an incision is made six centimetres long. It is considered superfluous if the incision only passes through the skin and muscles, and the pleura itself is opened by a trocar. In the Academy discussion of 1887, Dr. Abbe advised the spray, but this was not mentioned by any other speaker, nor in the discussion at Washington last September over Dr. Huber's two remarkable cases of double empyema. Dr. Gerster, in his treatise on antiseptic surgery, expressly condemns the spray as an objectionable feature for empyema as for other operations.

In the case of the little boy here described, no spray was used, and recovery was complete—*i. e.*, the tube was withdrawn on the thirty-second day. In my five other cases, however, the duration of treatment was about two months. In Dr. Daniel's six cases the spray was also omitted, but other antiseptic precautions were used. The trocar and drainage-tube employed had been kept in pure carbolic acid during the twenty-four hours preceding the operation.

Of these six cases one died suddenly on the third day, twenty-four hours after an erysipelatous inflammation around the wound had been noted. In the five other cases the tube was removed on the thirteenth, nineteenth, twenty-third, twenty-eighth, and thirty-third days respectively.

While the fluid is running out from the incised chest no air can enter. The entrance of air is signalized by a loud suction noise, and takes place at the moment that the abnormal positive tension in the pleural cavity, due to the presence of the fluid, is changed to a negative tension by its evacuation. It is quite possible, if the contents be perfectly fluid, to place a thick layer of antiseptic gauze over the opening at the moment the flow begins to slacken. By this means any air drawn into the chest will be filtered. This would even be possible when, through a large opening, semi-solid masses of fibrin and clots were being being expelled by coughing.

It is generally admitted now that infection of wounds does not proceed from germs floating in the air, but attached to instruments and other solid bodies. Further, the experiments of Stimson, confirmed by Cabot himself, who so strenuously recommends the spray, show that air which has passed through spray continues to infect culture tubes; on the other hand, methods of operation which effectually exclude air, as the subaqueous drainage, and the guarded trocar of Reybaud, were very often followed by fever and other signs of sepsis, often fatal. On one day when I operated by the trocar on a child at the Mount Sinai Dispensary, another child of the same age was admitted to the wards and submitted to subaqueous drainage. The dispensary case, though brought from a distance three times a week, recovered, after some vicissitudes, in two months. The hospital case died of exhaustion after three.

In cases where air has been thoroughly excluded from the pleura opportunity remains for infection of the external wound; and this opportunity recurs with every change of the dressings. Constant irrigation of the lips of the wound during the dressing is a much more potent method of averting infection than is the spray.

The size of the incision seems to have been regulated according as the operators were more preoccupied with freeing the pleural cavity from pus, or with facilitating the reëxpansion of the collapsed lung. It is under the influence of the first idea that König and Demme have advised the resection of a rib for, at least, all adult cases; that directions are given for incisions six centimetres long, and that stress is laid upon placing the incision as low as possible. Certainly, for children at least, too many cases are now on record of cure by simple incision to allow us to consider resection as anything but an exceptional expedient. Further, so long as the contents of the pleura are entirely fluid, it is difficult to see why they will be evacuated any more easily through an opening of six centimetres than through a tube the thickness of a finger. The tube is only inadequate if there are solid coagula too large to pass easily through it. Similarly, it seems to me extremely doubtful whether the situation of the tube at a lower portion of the chest is more favorable to the outflow than a higher position. In a case of empyema that I saw in consultation with Dr. Daniel, the pointing was under the right clavicle, and here the opening was made. Drainage was perfect; and this is always the experience with spontaneous openings of empyema. The fact that these openings occur in the upper parts of the chest at least as often as lower down, is itself a proof that the contents of the pleural cavity may be pushed toward any point on the circumference, and do not follow the laws of gravity. The familiar experience of the straight glass drainage-tube which is so often plunged into

[1] Brit. Med. Journ., 1876.

[2] Berliner klin. Wochensch., 1878.

[3] Diseases of Lungs and Pleura.

[4] N. Y. Med. Journ., 1880. See also Neurbe-Fraentzel, in Ziemssen.

The spray was used in all the forty-one cases, including fourteen cases of children, in the statistics compiled by Bouveret.

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the peritoneal cavity after laparotomy operations, shows that the pressure of the closed cavities of the living body is capable of forcing fluids upward as well as downward. In the empyema operations the perforated drainage-tube generally passes upward; it certainly did so in the case of Frank. But the circumstance did in nowise interfere with the drainage.

The forces which expel the fluid from the pleura are: 1. The positive tension existing in the cavity, and which, to the great detriment of the patient, has replaced the negative tension which is normal. 2. The reëxpansion of the lung, which should begin as soon as this positive tension is lessened. This is illustrated in the balloon and flask. 3. The respiratory movements—those of inspiration as well as those of expiration. During inspiration, when the chest-wall moves outward and enlarges the pleural cavity, all the contents of the cavity must move forward in the direction of the least resistance. Unless the opening be occluded, the lung will not so move, because the internal atmospheric pressure which should keep out the walls of its cavities, is neutralized by air on the other side, and is, therefore, inoperative. But if there be fluid in the cavity, its pressure exceeds both that of the air within and of the air without; and when compelled to move, it moves forward toward the point of least resistance—*i. e.*, the fistulous opening toward the external air.

For these reasons it is difficult to see any advantage in a very large opening; provided, of course, that the flow of liquid continues perfectly unobstructed.

The gradual contraction of the pus cavity, effected through the approximation of the pleural surfaces, can hardly be counted among the expelling forces. Certainly a most important condition for the formation of such adhesion is the persistent evacuation of the pus as fast as it forms. In the case of Frank, as the flow of pus through the canula began to slacken, an antiseptic pad was laid over the opening—not, however, before air was twice drawn into the pleura with the usual suction noise. The respiration was considerably accelerated at the moment of opening the pleura, and for some moments afterward, the inspiration becoming deeper. The same change in respirations is observed when a closed tube, communicating only with a manometer, is plunged into the healthy pleura of a dog. The change seems due entirely to the greater exertions made by the sound lung, but implies a direct transmission of impressions from the wounded pleura to the inspiratory centre in the medulla.

In the boy Frank the opening made by the trocar was enlarged by the bistoury until it would easily admit the drainage-tube; this was inserted, and secured by a safety-pin packed around with iodoform gauze, after the lips of the wound had been thickly powdered with iodoform, and while the pus was still running from the tube, an antiseptic dressing was applied without previous irrigation of the pleural cavity.

The question of irrigations into the pus cavity—primary or consecutive—has been strenuously debated. When advised, it is with the intention: 1. Of thoroughly removing all pus from the pleura, so that none may remain to decompose. 2. Of disinfecting the pleural cavity of germs which, in spite of all previous precautions, may have been carried into it.

Now this second reason can have no weight, if the antiseptic precautions previously taken have any real efficiency. As to the first reason, the records of cases prove that pus reaccumulates in the twenty-four or forty-eight hours following the operation in amount sufficient to necessitate a change of the dressings, and this, whether irrigation has been practised or not. Nevertheless, many of the writers who use primary irrigation, as Cabot, do not repeat the washing on account of this reaccumulation, but simply renew the dressings. If the irrigation be not needed the second time, it is difficult to see why, for the purpose of removing the pus, it should be required the first time.

The amount of pus that is poured out in the first day or two after the operation is often astonishing. In the case of Frank—where, at the first dressing, thick layers of cotton wool were used instead of, as subsequently, oakum—the dressing, clothes and even bedding were saturated. It is true the evacuation of pus had not been quite complete at the operation; but there could not have been much fluid in the pleura, for, before applying the dressing, I ascertained that almost normal percussion resonance extended all over the back of the chest. The abundant discharge, therefore, of the first day must have been due to a new formation or effusion of pus; and it is comprehensible that the removal of pressure from the pleural surfaces may facilitate an abundant emigration of leucocytes from the distended capillaries and lymph spaces of the pleural tissue.

In a perfectly normal progress of events, when the later or secondary elimination has been effected, the discharge from the drainage-tube should rapidly diminish and cease. Bouveret relates one case of complete cure in nine days, the shortest on record. Many cases are on record where the tube could be removed in twenty or fifteen days, or even less. In Ewart's pioneer case, an adult, the discharge is said to have become serous in six days. Two circumstances thwart this normal progress: the suppurating surface may become infected, or the pleural inflammation which gave rise to the suppuration may persist as suppurative, instead of retrograd-

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ing to an adhesive form. In either case, the child will have fever, and the discharge will remain offensive. In either case, irrigation becomes indicated, and, if practised, will be followed by a fall of temperature.

It is certain that thousands of irrigations have been practised which only serve to keep up the irritation they were intended to allay. This is especially the case with carbolic acid irrigation, of either one, two, or three per cent. The danger of poisoning is very considerable; but, apart from that, the danger of irritating the inflamed tissue of the pleura is more uniformly present. Cases treated by carbolic acid irrigation have been described complacently as sustaining a treatment of three months, which, in a non-complicated case, itself impugns the treatment. In two of my own cases, one per cent. solution of carbolic acid was used for irrigation when the temperature rose; but the child became restless, as from pain, and the temperature rose higher. Irrigation with a solution of bichloride 1 : 6000 was substituted, and the temperature fell, not again to rise.

Out of the five cases reported by Dr. Daniel only one was irrigated. The irrigation was made daily with a two per cent. solution of carbolic acid, for a period of nineteen days, yet the fever continued with little abatement. It is evident that, apart from the irritation of the inflamed pleura, repeated irrigations tend to thwart the two essential parts of the healing process. Each tends to break down the delicate adhesions forming between the pleura, and to oppose the reëxpansion of the lung. No one can deny their utility when pus is found fœtid at the time of the operation, or if it become so afterward, for it is important to remove fetid pus or gangrenous masses at once, and not trust to their gradual elimination. But there is no proof that it is important to remove fluid and laudable pus at once, but only to provide for its free, steady, and uninterrupted gradual evacuation. As soon as the internal tension of the pleural cavity has been relieved by removal of such excess of fluid as spurts with force through the drainage-tube, and as soon as drainage is instituted and maintained, tendencies to absorption of pus are arrested and the lung is enabled to reëxpand. If the pleural cavity were empty of fluid, but, from imperfect collapse of its walls, filled with air at ordinary atmospheric pressure, expansion of the lung would be retarded as much as in the presence of fluid. This is sufficiently demonstrated by the accident of pneumothorax. There is really no advantage in removing the pus faster than the lung can follow its retreat, and the contact of the pleural surfaces be effected.

In my case, no irrigation was made at the time of the operation. The next day, the rectal temperature, which had been 104° on the afternoon of the operation, had fallen to normal; the dressings were saturated, and were removed. During removal, air was twice, but only twice, sucked into the pleura. During the next week I did not see the child, but the dressings were changed every two days by another physician. The temperature, taken in the mouth, was reported as normal during the week, but the cough was severe, while it had been scarcely perceptible before. On the seventh day I saw the child again, and found the rectal temperature 101½°. The percussion resonance over the lung was nearly normal, the breath sounds harsh and bronchial without vesicular murmur; the heart was in place. In changing the dressing this time, the cotton wool outside the antiseptic gauze was replaced by oakum. Before replacing the dressing, air was again drawn into the chest with a loud noise. Again I did not see the child for four days, during which, however, the dressing was twice changed by the other physician. On the eleventh day after the operation, I found the rectal temperature 103°, the child coughing much, still pale and languid, complaining much of pain in the chest. On this occasion, and for the first time, I irrigated from a fountain syringe with a warm solution of corrosive sublimate, containing 1 : 6000. On this occasion, no air was drawn into the chest. Two other changes were also made in the treatment: a valve of rubber tissue, hitherto imperfectly applied, was accurately adjusted over the fistula, and antipyrin was given in five-grain doses every three hours. Three effects were observed: The temperature fell permanently after seven doses of the antipyrin had been taken. The discharge lessened so much that the dressing remained untouched for a week, and was then found scarcely soiled. The cough lessened, the child became lively and free from pain, and a week after the irrigation, eighteen days after the operation, was found running about, eating well, and appearing quite well. The dressing was replaced, left a week longer, when the fistula was found to be granulating abundantly, the discharge entirely trivial. It is possible that the tube might then have been removed; it was evident that the pleural cavity had contracted to a sinus around the tube. For greater security, the tube was simply shortened, and only entirely removed a week later, on the thirty-second day after the operation. The fistula closed immediately.

On the eleventh day, when irrigation was performed, the character of the discharge had changed—become slightly sanious, with a few small fibrinous coagula. But there was no evidence of their decomposition, nor of septic infection of the wound, although on several occasions the dressings had been too loosely applied, and the antisepsis imperfect. The fever, pain, and cough seemed to have been

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kept up by the continued inflammation of the pleura, and it is this which seemed to subside promptly under the combined influence of the bichloride irrigation, the valve, and the antipyrin.

(*To be concluded.*)

HERPES PROGENITALIS.[1]

BY G. FRANK LYDSTON, M.D.,
OF CHICAGO, ILL.

HERPES progenitalis is an important, though relatively harmless, disease. Its importance depends chiefly upon its frequent occurrence, the greater or less amount of local irritation which it sometimes produces, and its demoralizing effect upon the mind of the patient. As is well known, it consists of a development of small vesicles filled with a watery, sometimes sero-purulent, fluid upon the skin or mucous membrane of the genitals. It is rarely seen in the female, although in Hebra's *Atlas* there is an excellent representation of the disease as occurring in a woman. According to Unna, the disease is not so very infrequent in women—this accords with my own experience.[2] Dr. Duhring states that he has never seen a single case in women. It is possible, as Unna says, that women are as susceptible to herpes as men, and if this be true, the reason for its apparent rarity must be the protected situation of the lesions which prevents their being readily discovered.

According to Legendre, Fournier, and Bruno, the coincidence of an herpetic eruption with menstruation is by no means infrequent, and in some women it comes on two or three days prior to each menstrual epoch. My experience is limited to a single case in which a lady suffers considerably at each menstrual period from a crop of herpetic vesicles and ulcerations about the inferior commissure of the vulva. They are very annoying from the pain and smarting which attend them, the act of urination being particularly distressing. With some attacks there occurs marked œdema of the genitals.[3]

The diagnosis of herpes progenitalis is, in uncomplicated cases, comparatively easy. There is in most cases a history of recurrent crops of vesicles and minute ulcerations perhaps independent of sexual intercourse. There will be no definite relation in the large proportion of cases to any particular act of intercourse—even when due to irritating materials deposited upon the mucous membrane during uncleanly coition the affection follows at variable intervals, in some instances the eruption appearing within a day or two, and in others not until the lapse of as many weeks. When the lesions have become ulcerated a diagnosis is often difficult.

The cause of herpes is usually said to be local irritation, but I am convinced, from personal observation, that by far the greater majority of cases are dependent upon a neurosis—the disease in this respect strongly resembling herpes zoster. Some patients of a highly irritable, nervous temperament, who are readily subject to nervous depression, and who perhaps suffer from more or less general debility, are affected at variable intervals with successive attacks. Malarial infection may produce herpes progenitalis as well as herpes in other situations. Unna is inclined to regard the disease as a rudimentary form of herpes zoster, and calls attention to the limitation of herpes zoster and herpes progenitalis to the peripheral points of distribution of nerves. The same author gives as other causes of herpes a disturbance of the parts incidental to pregnancy and menstruation in the female; uncleanliness, decomposing secretions, hot weather, obesity, forcible attempts at intercourse, impeded erection due to redundant prepuce, excessive venery, and masturbation; these various causes giving rise to excessive congestion of the genital organs, which the author believes to be the essential condition upon which herpes progenitalis depends. Imperfect or perverted sexual hygiene is peculiarly apt to give rise to more or less congestion of the genitalia with attendant disturbance of the delicate nerves supplied to these parts. That this condition of affairs may give rise to trophic changes in the mucous membrane and skin, as evidenced by the occurrence primarily of vesicles and secondarily of ulceration, is highly probable.[1]

There has been, so far as I am aware, no mention made by any of our numerous writers of the possible causal relation of syphilis to herpes progenitalis. I am convinced, however, from practical observation and experience, that many cases are directly dependent upon the syphilitic cachexia. I find quite a number of my syphilitic patients returning to me from time to time, with apparently typical crops of herpes upon the genitalia, which are obstinate to all local measures excepting the application of mercurials. Tonic and mild anti-syphilitic remedies are also required internally. I attribute the herpes in such cases to several causes:

First. (In some cases) local irritability incident to a pronounced chancre or mixed sore which has initiated the patient in his venereal trouble.

[1] Read before the North Texas Medical Association, December 12, 1889, at Gainesville, Texas.

[2] Journal of Cutaneous and Venereal Diseases, August, 1883.

[3] An interesting case of herpes, apparently dependent upon menstruation, recently came under my observation, in which the eruption instead of being located upon the genitals appears between the fingers. It comes on a few days prior to menstruation, and lasts for a day or two after its cessation. During this time considerable neuralgic pain in the arm and hand is complained of.

[1] I have under observation the case of a lady in whom herpes progenitalis develops coincidently with pregnancy; indeed, she regards the herpes as pathognomonic of pregnancy.

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Second. Disturbed innervation and consequent trophic changes, incidental to the effects of the syphilitic poison, excessive medication (especially with mercury) and mental worry, upon the sympathetic system.

In regard to the areas involved by herpes progenitalis, Unna states that it rarely affects the integument of the penis, scrotum, or thighs, being limited usually to the glans penis. He also states that the eruption almost invariably corresponds with the course "of the ramus dorsalis penis," a branch of the pudic nerve. As far as my own personal experience goes, I have not noted any regularity of distribution of the herpetic vesicles, and I have seen a number of cases of the disease which were limited to the skin of the organ. The pain of herpes progenitalis is usually insignificant; however, if urine be brought in contact with the small ulcerations left after the rupture of the vesicles, the part becomes exceedingly tender and much burning and smarting are complained of. The disease is apt to occur about the borders of the meatus urinarius and occasionally just within the lips. I have one patient in whom a row of some half dozen small herpetic vesicles develops upon the right side of the meatus from time to time, and another in whom there is an occasional development of herpetic spots just within the orifice of the urethra. In such cases there is considerable pain and smarting during urination, and the disease seems to develop coincidently with nervous depression.

The two diseases for which herpes may be mistaken are chancre and chancroid. There is, of course, no difficulty in the differential diagnosis of herpes from typical chancre and chancroid when these diseases are fully developed, but in the incipient stages of these affections a mistake is very apt to occur. Fortunately, however, a few days' study of the case will generally clear up the diagnosis. Chancroid often begins as a small herpetiform vesicle or perhaps a group of vesicles or ulcers. This is probably due to the fact that the chancroidal virus or perhaps some other irritating material to which the parts are exposed during intercourse, produces herpes by simple irritation; chancroid developing at the site of the herpetic lesions at a variable period of time thereafter. The same explanation is true of some cases of hard chancre. The "herpetiform chancre" described by French writers is probably explained in this way. Unna has noticed a form of sore which is probably the so-called herpetiform chancre. With reference to this point, he says:

"I know only two affections which, because of their form and rarity, may be mistaken for herpes progenitalis, but only during the first few days of their existence. Chancres in the male now and then occur on the inner surface of the prepuce, are benign in their appearance, and slowly involve the surrounding tissues, and these at first sight look like herpetic erosions. They are the chancres of Tyson's glands which develop as inconsiderable epithelial proliferations in small contiguous groups of sebaceous glands—usually a group of from four to six neighboring glands are attacked. The round follicular openings are eroded, abnormally patulous and acutely hyperæmic, so as to give the impression of an herpetic erosion. If a simple dusting powder is prescribed for this affection, the case drags on and the typical herpetic course being followed, slight periglandular induration becomes manifest, succeeded by glandular disintegration and confluent, rapidly spreading ulceration, all of which impress the physician that he is dealing with a soft chancre, the course of which was protracted by its unusual seat. These exceptional cases, from the favorable prognosis they may elicit, are apt to discredit the physician's ability."

In the cases in which true syphilis follows an apparently herpetiform lesion of the genitalia, there will probably always be found upon close inspection, if the case be carefully watched from day to day, a greater or less degree of chancrous induration.

One of the reasons for the confusion that exists in the minds of physicians regarding the relation of certain atypical genital lesions to constitutional syphilis, is that they do not watch their cases with sufficient care and are prone to give a pronounced opinion in regard to the prognosis of such lesions without due consideration of the many sources of error. If these cases were more carefully studied, it is highly probable that the ranks of the dualists would be sadly depleted and many of those cases of syphilis which have apparently followed simple, non-indurated lesions of a herpetic, ulcerative, or chancroidal character, would be found to have been preceded by induration of greater or less degree which developed after the simple sore had apparently healed, and at a time when the patient's attention was no longer directed to the local difficulty. Again, as will be seen when we come to the consideration of the diagnosis of syphilis, induration may appear and disappear within a short time and its presence escape attention, unless the case be watched with extreme care from day to day.

When herpetic ulcerations become inflamed they are apt to assume physical characters strongly resembling those of true chancroid. Indeed, I am of the opinion that under favorable circumstances herpetic and balanitic ulcerations, or, for that matter, ulcerations of any sort whatsoever, may become transformed into a mild type of chancroid. I make this statement with a full appreciation of the wide clinical differences which exist between typical herpes and typical chancroid. I will, at this point, interpose a word of caution: Never give a positive opinion upon the character of herpes progenitalis, or, indeed, upon any apparently non-specific lesion of the genitalia in cases in which there has been a suspicious exposure within a suffi-

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ciently recent date, without stating plainly to the patient the possibility of there having been a syphilitic or chancroidal infection which will develop sooner or later, and which the physician has no means of detecting prior to the appearance of the specific sore.

The treatment of herpes progenitalis is, in the majority of instances, sufficiently simple, but in a certain proportion of cases the disease is very obstinate. Simple dusting powders or astringent washes are all that is required in the way of local measures, as a rule. The powder which I have found to be most efficient is the preparation of oleate of zinc prepared by Parke, Davis & Co. Other preparations I have found to be unreliable, as they tend to become lumpy, and, consequently, produce irritation. Calomel, oxide of zinc, subnitrate and subcarbonate of bismuth, and lycopodium, singly or in various combinations, are useful. A simple astringent wash of iodide of zinc, five or ten grains to the ounce, or alum, in a strength of twenty or thirty grains to the ounce, may be used as a lotion. It may be necessary to touch the herpetic spots with nitrate of silver. When the lesions are very painful, morphine or cocaine may be added to the dusting powder. The essential point in the treatment is to keep the parts clean and dry. In some instances circumcision is advisable. In quite a number of cases it will be found necessary to adopt constitutional as well as local measures: tonics, such as quinine, iron, and strychnine, and where there is much nervous irritability, bromide of potassium, are indicated. In some very chronic cases, arsenic will be found to produce excellent results.

In the solitary case of menstrual herpes which I have seen, the bromides, with very small doses of ergot for a week or ten days prior to the menstrual period, have proved of some benefit, although the patient is still troubled more or less. In some cases of genital herpes in the male the occasional passage of a sound will prove beneficial as tending to relieve nervous irritability and congestion, to allay sexual excitability and, in a general way, improve the tone of the genital organs. I have seen a few obstinate cases which were apparently cured by matrimony. A few cases will be found to be absolutely resistant to treatment, but may at any time recover spontaneously.

812 OPERA HOUSE BLOCK.

THE MANAGEMENT OF BLEPHARITIS.[1]

BY H. GRADLE, M.D.,
OF CHICAGO, ILL.

ACCORDING to some of the popular text-books on diseases of the eye, the inflammation of the margin of the lids would seem to be a very easily remedied affection. Anyone, however, who has had extensive personal experience will readily grant that such is not the case, and that the disease is very often rebellious, at least under the routine treatment most commonly advised. As this routine treatment—viz., the use of some mercurial preparation in the form of a salve—has proven neither the quickest nor the most reliable in my hands, I wish to offer some therapeutic suggestions based on my own experience.

We can distinguish clinically two forms of blepharitis, viz., the *ulcerative*, and the *non-ulcerative* or *squamous* inflammation of the palpebral margin. The former may be closely compared to eczema as seen on the scalp, while the scaly form of blepharitis resembles that affection of the scalp known as dandruff or seborrhœa, also described by Michelson in Ziemssen's *Cyclopædia* as alopecia pityrodes. It is difficult to say from clinical evidence alone whether these two forms represent different stages of the same disease, or are separate and distinct processes. The latter seems to me to be the more probable view. One of the reasons pointing toward this view is the fact that the squamous form invariably affects both eyes, while ulcerative blepharitis may be limited to one side. It is true, on the other hand, that something like transitional forms are occasionally met with. Sometimes small ulcers occur in the squamous form; but occasionally, too, one may find an abrasion of the scalp under a thick scale of dandruff. After the ulcers of the ulcerative form have been healed, the edge of the lid may remain inflamed for a while, but in that case it scarcely presents the scaliness of the typical squamous blepharitis.

Fukula claims that anatomically *blepharitis ulcerosa* is a disease of the papillary layer of the skin, while the squamous form of disease is located in the glands.

We are no better informed as to the causes of blepharitis than as to the etiology of the corresponding diseases of the skin in other parts. In the fresh pustules of the ulcerative form, Widmark has found the pus staphylococci. These undoubtedly cause the suppuration, but whether this is a complication or the cause of the disease is as yet undecided.

We do know, however, of certain predisposing influences which must be borne in mind in the successful treatment of this disease. Two of these conditions are commonly known to oculists, while the third has as yet received less general attention. The first of these is insufficiency of the lachrymal passages. Stricture of the duct or mere inflammatory stenosis, and especially inflammation of the tear-sac, may be the condition which favors the occurrence of the disease as well as the obstacle to the cure of blepharitis, particularly the ulcerative form. It

[1] Read before the Chicago Medical Society, January 20, 1890.

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has further been pointed out by various oculists that eye-strain due to hypermetropia or astigmatism often favors the persistence of blepharitis, and may require correction by glasses before the inflammation of the lid can be removed by local treatment. A third condition which my experience has often taught me to recognize as a factor in the production of blepharitis is nasal disease. The mere coexistence of nasal anomalies and blepharitis would not prove the causal relation of the former, in view of the great frequency of morbid processes in the nose. I have, however, seen, a number of times, that nasal treatment alone improved and gradually cured a blepharitis which by itself had annoyed the patient so little that he had not sought my advice for the affection of the lids, but only for the nasal difficulty. On the other hand, I have occasionally met with cases of blepharitis, more especially the ulcerative form, in which I could not succeed in curing the patient permanently until I had turned my attention to the nasal cavity. I do maintain, however, that even in those cases where the nasal affection is presumably the influence which favors the occurrence of the disease and tends to perpetuate it, blepharitis can often, though not always, be cured by local means without removing the nasal anomaly. Hence I consider nasal anomalies not the exciting cause of blepharitis, but merely a predisposing condition. In view of the very many coincidences of blepharitis and nasal disease which I have seen, I believe this predisposing influence to be a frequent one. Predisposing nasal disease may be any form of nasal disturbance or anomaly as well as blockage of the post-nasal space by adenoid vegetations. The mode in which nasal anomalies influence the lids is probably by creating disturbances in the venous circulation. In some instances besides, nasal disease leads to lachrymation and insufficiency of the lachrymal passages.

Fuchs[1] has called attention to another cause, or rather predisposing condition in occasional instances of blepharitis, viz., insufficient length of the skin of the upper lid, causing a slight gaping of the lid-aperture during sleep.

In the treatment of the ulcerative form of blepharitis, I can only endorse the majority of authors as to the use of the nitrate of silver stick. Its thorough application to the ulcers after removing the adherent crusts will stop the process sometimes at once, at other times after a few repetitions. The non-ulcerative inflammations which may still persist can then be made to yield by the use of an oxide of zinc salve. The latter has seemed to me to be more efficacious with the addition to it of about 5 per cent. of ichthyol. In other instances, I have succeeded well with pyrogallic acid, one part to eight of vaseline. I have seen either of these remedies succeed where mercurial ointments failed. It is well to remove with forceps all loose cilia in addition to this treatment.

The squamous form of blepharitis does not always yield to mercurial ointments, be it the white or the yellow precipitate, or the nitrate of mercury. It is necessary to remove in any case the scales which sometimes form very quickly. I have found that a 5 per cent. solution of chloral carefully applied with the finger to the edge of the lid facilitates the removal of the scales and may by itself cure the disease. A quicker treatment is the application of a pyrogallic acid ointment, which it is well to tell the patient may stain the skin temporarily.

Much quicker and more satisfactory results, however, I have been able to obtain by a treatment suggested to me by my dermatological friend, Dr. Zeissler, on the ground of the analogy between squamous blepharitis and seborrhœa of the scalp. This consists in the use of sulphur ointment, which I have never seen mentioned in ophthalmic literature. I have usually employed a 3 per cent. mixture of milk of sulphur with vaseline with the addition of 3 per cent. of resorcin. The latter seems to facilitate the removal of the scales, but I am not sure that its addition is essential. The application of this salve to the edge of the lid at night shows an influence which may be almost termed specific, only, however, in the squamous, not in the ulcerative form of the disease. Lids which have been red and unsightly for months and years often assume a normal appearance within one week. While it may be well to use the salve for some four to six weeks to guard against relapses, I have found that if its full benefit is not obtained in two or three weeks, it is due to some of the predisposing influences which then require attention. Of course, we should not attempt to cure a blepharitis without previously restoring the permeability of diseased lachrymal passages except on the patient's distinct refusal to submit to any operation. Where lachrymation persists it is scarcely possible to remove the blepharitis. In the case of hypermetropia or astigmatism the necessity for correction by glasses exists only if the eye-strain is either noticeable to the patient in any way, or if a few weeks of local treatment has not succeeded in curing the blepharitis. Finally, as to nasal influence, our therapeutic measures must also be guided by the circumstances. If the patient does not wish any nasal treatment, we may as well attempt to cure the blepharitis by local means, which will generally be successful. If this cannot be accomplished, there still is time to treat whatever disease of the nasal cavity may be found.

[1] Die Entzendungen des Lidrands: Wiener klin. Wochenschrift, 1888, Nos. 38 and 39.

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CLINICAL MEMORANDA.

MEDICAL.

Two Cases of Tetanus in Infants, with Remarks.—The two cases here detailed are both instances of tetanus in the newborn infant, but the first was evidently due to an injury to the head, and, therefore, can scarcely be classed as a case of infantile lockjaw, notwithstanding that the state of tetanic convulsion was present. The second is a typical case of trismus nascentium, about which so much has been written.

CASE I.—I was called about noon of October 16, 1889, to see Lizzie M., single, white. The history given me was that, save some restlessness at night, she had been perfectly well until 1 A.M., of the morning I saw her, when she suddenly became totally blind. In the course of my examination, I found she was pregnant. A small quantity of urine was obtained, which was afterward found to contain casts and albumin. After I left the house to examine the urine, the woman had a terrible attack of convulsions, for which I gave her hypodermics of pilocarpine and nitro-glycerin and large doses of bromide and chloral. She soon had a second and last convulsion. Labor commenced almost immediately, and was terminated successfully by a high forceps operation under chloroform. The bones of the child's head were unusually movable, and I was able to depress the occiput to a great degree during my examination. The child was asphyxiated, but speedily revived and cried feebly. Its head was marked slightly over the right parietal protuberance and the temporal region on the same side. Two hours after birth it had a convulsion. I found it in the morning in the following condition: The left side of the face paralyzed; the right side of face the seat of *tonic* contraction, being much puckered and the jaw tightly shut. The right eye firmly closed, the left open. The left arm and leg were *not* paralyzed; both arms were drawn tightly to the side, the forearms flexed on the arms, and the fingers tightly flexed with the thumbs across the palms. The body of the child could be moved as if composed of a single piece, if lifted by the strongly flexed arms. The legs were rigid, the knees being slightly bent. Any disturbance of the child would bring on frightful paroxysms, in which it would almost succumb. It expired forty-eight hours after birth.

No post-mortem was allowed.

From the fact that severe compression and traction were made during delivery, and the additional fact that the left side of the face was paralyzed, it is safe to attribute the tetanic convulsions from which the child died to the use of the forceps. Though the convulsions were tetanic and not clonic, the case will scarcely come under the head of trismus nascentium, as it lacked many of the characteristics of that disease and had the potent cause of injury to the head by the forceps.

CASE II.[1]—Mrs. G., colored, was taken in labor 6 A.M. on October 25, 1889. The os was but slightly dilated when first seen about noon, and I left with instructions to send for me when needed. About 6 P.M. I was hastily called and found the child, an unusually well-formed and large male, born. All went well until the morning of the ninth day, when the mother said that the child had worried all night and seemed unable to nurse. On examination I found all of the muscles of the face strongly contracted, the jaws firmly locked, the arms tightly drawn to the side with thumbs in the palms. It could swallow with but little difficulty, but was evidently in great pain. The umbilicus had not healed, a large ulcer covered with pus occupying the seat of the separated cord. The next morning the jaws were still firmly locked, and the least disturbance would bring on frightful tetanic convulsions. The child's face was constantly wrinkled by the contracted muscles. The head was retracted, the elbows bent, the thumbs in palms, the knees drawn slightly apart, legs bent at knees, the great toes adducted, and the other toes flexed. The child could be lifted without bending the spine, by placing a hand beneath the heels and occiput. The pupils were contracted. There was no strabismus. The child lived in this condition for twenty-four hours; the least disturbance causing the frightful paroxysms, but continuously in a state of tetanic convulsion. Temperature 105.5°.

Post-mortem, fifteen hours after death: The rigor mortis, which was marked two hours after death, had partially disappeared. Examination of the brain was not permitted. The condition of the bones of the head which existed during life persisted. The sagittal suture was widely open. The occipital bone was markedly depressed, being overlaid by the edges of the parietal. The umbilical ulcer was covered with a thin, dry crust. The lungs were highly congested, and the heart was distended with blood; otherwise the thoracic and abdominal organs were in a normal condition. The umbilical vein was patulous and was *not* the seat of any inflammation. The left hypogastric artery was filled with a clot, the right was free. I removed the bodies of the fifth and sixth thoracic vertebræ. The posterior part of the canal was the seat of extravasated clotted blood. There were no clots *within* the dura mater, though the veins were slightly congested.

There can be no doubt that this case is a true one of trismus nascentium, with the irritated umbilicus as the probable cause. Various and diverse theories have been advanced to explain this most curious and fatal disease.

In 1846, Dr. Marion Sims published a paper in the *American Journal of the Medical Sciences* in which he attributed the malady to a depression of the occipital bone, and claimed that the disease could usually be cured in its incipiency by simply turning the child on its side. He held that laying the child on its back, with its occiput resting on some hard substance, increased the depression of the occiput which always exists after birth. This theory was upheld by Dr. Hartigan, as late as 1884.

Dr. Watson, of Charleston, answered this article of Sims in 1851, and gave as the cause, inflammation in or around the umbilicus. In answer to the criticism that the umbilicus is frequently healthy in cases of trismus, he cites the fact that the wound which is the cause of traumatic tetanus is frequently found in a healthy condition at the onset of the disease.

Beside these two causes there is scarcely an accident to which an infant is liable that has not been cited as the causation of trismus. All authors agree that the disease is most frequent among the poor with bad hygienic surroundings, and that it may also accur in epidemics.

The latest theory I have seen is that advanced by A. D'Erpine and C. Picot, of Paris, in a volume on diseases

[1] Reported to Philadelphia Pathological Society.

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of children published this year. They consider trismus nascentium, in common with ordinary traumatic tetanus, an infectious disease due to a specific microbe.

The treatment is highly unsatisfactory. Most drugs have been used without effect, the antispasmodics, notably chloral, being used most frequently at the present day. Sims's treatment by position alone is not mentioned by the later authors. Soothing and antiseptic dressings to the umbilicus, when it is irritated, seem of value. Prophylactic measures, viz., improvement in the hygienic surroundings, cleanliness of the infants, care in dressing the cord, seem to have been the important measures in breaking up the various epidemics.

M. H. FUSSELL, M.D.,
Physician to the Out-patient Department of the Hospital of the University of Pennsylvania
189 GREEN LANE, MANAYUNK

A Contribution to the Physiological Study of Infantile Digestion; a Preliminary Note.—For several months I have been engaged in the examination of the contents of the stomach, and also of the excreta, in nursing and artificially fed infants, and I desire to record in this preliminary note certain conclusions reached from these investigations.

The method has consisted in the chemical estimation of the amount of albumin, sugar, water, solids, fat, and ash in the stools of healthy and dyspeptic infants, and the examination of the contents of the stomach at varying intervals after feeding, by the chemical tests recently introduced for the study of gastric disease. These reagents have been Uffelmann's iron and carbolic acid test for lactic acid; Congo paper; the yellow tropœolin, and methyl-violet. Finally, the milk clot from the stomach has been microscopically examined to ascertain the degree of disintegration of the fat globules of the ingested milk, and to determine the presence of bacteria.

From these investigations the conclusions are reached that the stomach of the nursing infant and of the infant fed on sterilized milk, when both are healthy, contains neither hydrochloric nor lactic acid; when gastric catarrh is present or when high temperature has recently existed an acid, or acids, is found which reddens litmus, but does not respond to tests for hydrochloric and lactic acids. The milk clot from healthy infants, whether breast- or sterilized milk-fed, contains no bacteria, and its fat globules are reduced to granular matter in from half an hour to one hour after feeding. In proportion as gastro-intestinal catarrh exists the excreta of nursing and artificially fed infants contain an excess of undigested fat.

These results of investigation, combined with the clinical study of infantile digestion and its disorders, warrant the inference that in the digestion of the infant hydrochloric and lactic acids do not normally exist; that milk is clotted by a rennet ferment active in alkaline or neutral media; that the stomach serves the purpose of a coagulating bottle which is empty in less than an hour after feeding; that digestion and absorption proceed according to the activity of the pancreatic and intestinal secretions, the pancreas being especially concerned in normal digestion and the lack of its functional activity being most apparent in gastro-intestinal disease. It is my purpose soon to discuss further and elucidate these points.

EDWARD P. DAVIS, M.D.,
Professor of Obstetrics and Diseases of Children in the Philadelphia Polyclinic; Obstetrician to the Philadelphia Hospital

ANATOMICAL.

A Diverticulum from the Ileum.—In recording the following case I desire chiefly to call attention to the curious and interesting blind pouch which was discovered attached to the ileum, but also to note a peculiar inflammation of the sigmoid flexure of the colon. Further, I trust that this imperfect clinical record may aid in the appreciation of the peculiar difficulties in diagnosis constantly encountered by medical officers in hospitals for the insane:

Barbara R., a German, aged sixty-four years, married: transferred to this hospital from the Insane Department of the Philadelphia Hospital, where she had been for eleven years, after the fire which destroyed nearly all the buildings of that department in 1885.

Her mental condition during the four years of her residence here was that of chronic mania with delusions, and I have no doubt she was in the same condition while at the Philadelphia Hospital. Like many cases of this kind, she did much useful work, going out to the laundry and ironing-room regularly during the greater part of the time she was here. She was almost constantly either muttering to herself or talking aloud to persons whose voices she imagined she heard. She also had hallucinations of sight, and, in consequence, many delusions, and gave irrelevant answers to questions, or no answer at all.

About the middle of last August she began to lose much of her energy for work, but continued scolding and muttering to herself, as was her custom.

October 20th she vomited several times, and had some diarrhœa, the stools being light in color; she was put to bed, and the next day there was vomiting, but no diarrhœa. The general asthenic condition of the patient appeared to be out of all proportion to the objective symptoms, which did not seem to be grave. Strangulated hernia was suspected, but careful examination failed to discover its presence. She had cold sweats and subnormal temperature, and died October 24th.

Autopsy, eighteen hours after death: Body much emaciated; rigor mortis not marked. Heart firmly contracted; posterior leaflet of mitral valve strongly adherent in the half of its area nearest the line of insertion, so that the free surface of the valve was only about one-half of its normal area. Lungs normal. Small intestine normal in calibre, except in three or four places, where the lumen was contracted from one-half to three-quarters. The smallest length of intestine with diminished calibre was about four inches, the longest a foot.

Proceeding from the ileum, about two feet above the ileo-cæcal valve, an appendage or diverticulum was discovered. It was about four inches in length, and with a lumen of sufficient size to permit the introduction of the middle finger. It joined the intestine nearly at right angles, and was of a uniform diameter in its entire length, though a trifle smaller nearer the extremity than at the junction with the bowel, as seen in the cut. A slight uniform dilatation of the ileum was noted in the region of the bowel from where proceeded this process. The diverticulum, or "blind gut," ended in a rounded, slightly sacculated extremity, and was filled with soft fæcal matter.

The large intestine varied greatly in its lumen; in the

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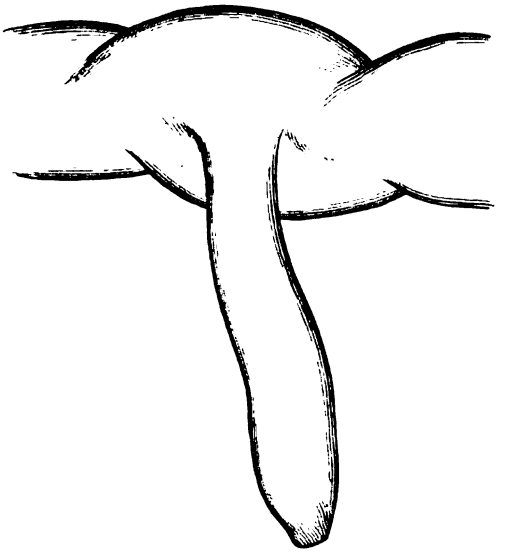
ascending and part of the transverse colon being very large, then a sudden diminution in the diameter, until it would not permit the introduction of an object larger than the thumb. This contracted portion of the bowel was about ten inches long. It terminated suddenly in



an expansion, which, in its maximum lumen, was about twice as great as that of the normal bowel. Lower down in the colon—about the sigmoid flexure—for the extent of nearly a foot, the bowel presented a livid, marroon color, and at some points was almost black. A thick, tenacious material was strongly adherent to the interior aspect of the inflamed portion of the gut. No signs of inflammation in other parts of the bowels were noticed.

REMARKS.—This peculiar inflammation, amounting almost to gangrene, in the lower part of the colon, possibly was caused by an embolus or thrombus, which cut off the nutrition of this part of the bowel—at all events, this local trouble was probably the immediate cause of death, although in a patient of this kind grave organic disease might have coexisted and have escaped notice—even at the post-mortem.

That anything more than an approximate diagnosis was possible I cannot believe. Indeed, such conditions in a rational person would certainly have been difficult, and perhaps impossible, to diagnose. As to the diverticulum, it might have been congenital or acquired. The fact that the bowel was so enormously contracted and dilated (a condition I have a number of times noted in autopsies upon the insane, and which I believe to be due to the habit of constipation) is favorable to the latter view. On the other hand, the peculiar form and size of the diverticulum would seem to indicate that the anomaly was congenital.

For the accompanying drawing I am indebted to the kindness of Dr. G. R. Trowbridge, of this hospital.

THEODORE DILLER, M.D.,
State Hospital for the Insane, Danville, Pa.

THERAPEUTICAL.

Compressed Pills of Salol and Terpine Hydrate in "Colds."—For two years past I have been using, in my service at the Philadelphia Polyclinic and in private practice, in the treatment of "coughs and colds"—that is to say, mild attacks of bronchitis and of catarrhal fever, acute and subacute, a pill consisting of

Salol, Terpine hydrate, of each 3 grains;

made and compressed for me by Mr. Kyner, the apothecary of the Polyclinic. These pills are now kept in stock for dispensing, or for sale to apothecaries by Messrs. Kyner & Kyner, and by Mr. Frank E. Morgan. The dose is one or two pills every second, third, or fourth hour, according to indications.

The results of this plan of treatment are quite satisfactory, especially in those cases of "general cold" or mild catarrhal fever, in which there exists more or less muscular and articular pain, associated with symptoms of bronchial catarrh; cases which I formerly treated with cinchonidine salicylate. In the more severe type of "colds," approaching more closely the typical influenza, of which we always see a number of cases in this city at this season of the year, as well as in the early Fall and in the early Spring—it is well to combine with the treatment mentioned, the use of some good alcoholic preparation of bark, or even quinine and whiskey. Fluid extract of coca is also quite useful. When the nasal symptoms are troublesome, they may be completely relieved by the judicious use of belladonna or atropine. The dose will vary with different individuals. It should be just short of the quantity required to produce full physiological effect. In cases where severe lumbar pains suggest renal congestion, the prompt administration of some simple alkaline diuretic, such as solution of ammonium acetate, with spirits of nitrous ether, is of benefit.

SOLOMON SOLIS-COHEN, M.D.
219 SOUTH SEVENTEENTH ST.

MEDICAL PROGRESS.

The Preparation of Lister's Double Cyanide Gauze.—SIR JOSEPH LISTER, in the *Lancet* of January 4, 1890, describes the method of preparing his new surgical dressing thus: Cyanide of potassium, cyanide of mercury, and sulphate of zinc are mixed together in solution in quantities proportioned to their atomic weights; the cyanide of potassium and cyanide of mercury being dissolved together in 1½ ounces of water for every 100 grains of potassium cyanide, and added to the sulphate of zinc dissolved in three times that amount of water. The precipitate is collected on a strainer, and when well drained is washed with two successive portions of water, equal in quantity to that used for the solution—viz.: 6 ounces for every 100 grains of potassium cyanide; at least this amount of washing being essential in order to free the precipitate sufficiently from the highly irritating soluble salts which are associated with it in its formation. The precipitate having been thus washed and drained, but not dried, it is thoroughly diffused with pestle and mortar in distilled water (6 ounces for every 100 grains of potassium cyanide), containing in solution 1 part of hæmatoxylin for every 100 parts of the cyanide salt, the amount of which is known from the circumstance that the dry product of cyanide salt is almost exactly equal in weight to the potassium cyanide employed. Hæmatoxylin is readily

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soluble in a small quantity of hot water, and remains in solution when added to a large quantity of cold water. The cyanide salt, while it precipitates the hæmatoxylin, changes its color to a pale-bluish tint. This is advantageously enhanced by the addition of a little ammonia to the mixture in the proportion of 1 atom of ammonia to each atom of hæmatoxylin. More than this proves prejudicial. The ammonia is added in a dilute form, and it is convenient to have the dilution such that one fluid drachm of the ammoniacal liquid shall correspond to one grain of hæmatoxylin. The dye is further economized by allowing the ammoniated mixture to stand for three or four hours, and stirring it occasionally, so that the ingredients may react thoroughly upon each other. If the mixture is filtered immediately, there is considerable loss of coloring matter. The dyed salt having been drained and dried at a moderate heat, is levigated, and may then be kept for any length of time. When employed for charging a dressing, it is diffused by means of pestle and mortar in solution of bichloride of mercury (1 to 4000) in sufficient abundance to drench the fabric thoroughly, for which 4 imperial pints to 100 grains of the salt will be found adequate. This will give a percentage of between 2 and 3 of the cyanide to the dry gauze. The gauze should always be used moist; and if it be prepared for immediate use, the process of drying may be omitted, the gauze, after being hung up for a while to drain, being further deprived of superfluous moisture by placing it in a folded sheet. It may afterward be conveniently kept moist by wrapping it in a piece of mackintosh cloth. When obtained dry from the manufacturer, it should be moistened again with the weak corrosive sublimate before it is used.

The Diagnosis of Syphilis and Malignant Disease.—DR. EDUARDO CONTE (*Il Progresso Medico*, December 1, 1889) gives some striking illustrations of the difficulties which often surround the diagnosis of syphilitic formations from cancerous and other malignant neoplasms. Though the subject is well worn, it is one of perennial interest to surgeons, as every one who has ever followed the practice of a hospital even for a few months must have seen cases in which swelling or ulceration due to syphilis has been mistaken for cancer, with the result, possibly, that some organ (generally the tongue) has been removed or mutilated without necessity. The opposite mistake is, perhaps, still more common, and under the plea of "giving the patient a chance," malignant disease is allowed to run on whilst precious time is lost in futile antivenereal medication. Under these circumstances, as Mr. Butlin well puts it, the "chance" is given, not to the patient, but to the disease. Dr. Conte's first case was one of syphilitic disease of the lower lip in a married lady, aged thirty-four, with two healthy children. She noticed a pimple on her lip, which, after some time, broke, the ulcer discharging a thin purulent secretion and showing a marked tendency to spread. It was repeatedly cauterized without effect, and the submaxillary glands became much enlarged. In the absence of any history or evidence of syphilis, the case was diagnosed as one of epithelioma, and the patient was urged to have the tumor excised. Dr. Conte, however, considering that the tumor was softer in the middle than elsewhere, and taking into account the brownish-red color of the ulcer, the thin purulent discharge, the absence of hæmorrhage, together with the painlessness of the swollen glands, came to the conclusion that it was syphilitic, and treated it with iodoform, which effected a cure. Subsequently condylomata appeared about the anus and vulva, with a syphilitic rash upon the body and enlarged glands in the neck and groin. The infection was traced to smoking cigarettes which a young man with mucous patches used to light for the patient. In another case an officer of the Italian navy, aged forty-five, had an ulcer on the scrotum which was diagnosed as malignant. The ulcer was circular in form, measured one centimetre in diameter, and had raised edges. There was a thin discharge, and the surrounding tissues were thickened; not far from the ulcer there was another about half as large. The inguinal glands were enlarged. No history of venereal disease beyond gonorrhœa in early youth could be obtained. Dr. Conte, nevertheless, diagnosed the case as one of subcutaneous gummatous nodules. Iodide of sodium was given internally: cotton-wool soaked in a 1 : 1000 solution of corrosive sublimate was applied to the ulcers, and the same preparation was injected hypodermically to the amount of 1 centigramme a day, the patient, who would not listen to any hint that the disease was syphilitic, being led to suppose that it was morphine that was injected for the relief of nocturnal headache, of which he complained. Complete cure followed this treatment. Several other cases illustrating the difficulties in the differential diagnosis of these affections are also reported by the author. —*London Medical Recorder*, December 20, 1889.

Flushing the Peritoneum after Abdominal Section.—With a novel object in view, MR. JOHN D. MALCOLM (*Lancet*, January 11, 1890) insists upon the importance of washing out and distending the peritoneum with water after laparotomy. If, as he says, in finishing the process of washing out the peritoneum, the abdominal cavity be distended with fluid, the intestines must be floated up toward the highest level of the cavity. As the intestines are thus buoyed up by the fluid, it is obvious that changes in the relative positions of the various coils must be greatly facilitated, while the traction which is at the same time brought to bear on the mesentery, must tend to straighten out that membrane in its attachments to the posterior abdominal wall and to the bowel, and so to undo any acute twists which may exist. The mesentery and bowel will thus be thrown into natural folds. If the fluid be then simply permitted to flow out of the abdominal cavity, or be carefully sucked out of the pelvis by means of a tube, without sponging or other mechanical disturbance, the intestines will tend to settle down in a natural position, just as they do when an ascites is relieved by tapping. In no other way can so satisfactory an adjustment be assured. It seems, therefore, that one of the most important, if not the most important, of the advantages to be secured by the free use of fluid in cleansing the peritoneal cavity, is the facility which this method of procedure affords for securing a natural disposition of the coils of the gut. A normal position being thus obtained, adhesions may form without giving rise to serious consequences.

Of interest in connection with the consideration of the normal arrangement of the intestines of these cases, is the assertion that patients who suffer much from chloroform vomiting after an abdominal section, not infrequently recover more satisfactorily and more quickly than those

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who are not so affected. Dr. Malcolm suggests as an explanation, that if a patient be constantly straining and retching for five or six hours or more after an operation, however much the intestines may have been displaced, the shaking of the abdomen must tend to bring them into a natural position again before adhesions can take place or become firm. If, on the other hand, there be little or no vomiting, and if the patient lie quiet, adhesions may form so as to fix the more or less paralyzed intestines in the position in which they have been placed, and so left, by the hand of the surgeon, which may not be a natural one.

The Doses of Digitalis and Strychnine.—In the *Therapeutic Gazette*, January, 1890, DR. HENRY M. FIELD expresses very decided views upon the doses of digitalis and strychnine usually employed. Long experience has convinced him that for cardiac conditions demanding digitalis, whether neurotic or structural, five drops of the tincture three times daily is usually a sufficiently large quantity. Press the remedy further, and evidence will be presented of a tetanized heart, although perhaps in slight degree. Here it is to be remarked that the chief experience of this writer has been in cases of weak and irritable hearts, caused, it may be, by various excesses, and most often encountered in adults who have long been overburdened by business responsibilities. Few other results in practical therapeutics are so sure to be satisfactory as are those which follow the use of digitalis in such conditions; but success depends upon reform, so far as possible, in the fault which produced the cardiac difficulty, and upon systematic regular ingestion of the tincture in doses of not more than five drops three times daily for months.

The alkaloid strychnine he considers should never be prescribed, for the reason that it is extremely insoluble, and when the drug is required it should be administered as a soluble salt, such as the sulphate. When the sulphate of strychnine is prescribed as an adjuvant to a laxative, the dose should be not less than one-fortieth of a grain. A pill composed as follows is used by Dr. Field as an aperient:

℞.—Aloin	⅓	grain.
Sulphate of strychnine . .	$\frac{1}{40}$	"
Extract of belladonna . .	$\frac{1}{10}$	"
Powdered ipecacuanha . .	½	" —M.

One such pill will usually be found sufficient.

The Hypodermic Syringe in Diagnosis.—Aspiration by means of the hypodermic syringe has come to be so much employed of late years, that a simple suggestion of a means by which the result may be rendered more reliable seems worth noting. One of the strongest objections to the ordinary use of a hypodermic needle for diagnostic purposes is that a positive result can alone be regarded as of certain value. The fact of not obtaining pus or other fluid, even when several punctures have been made, affords no reliable evidence as to the non-existence of a fluid-containing cavity. In the majority of cases pus will readily flow through a needle, but the lack of reasonable certainty in the event of a negative result is highly unsatisfactory. A suggestion offered by Dr. F. T. KING is as follows: Draw boiled water into the syringe until it is about one-third full, and, after puncturing, slowly expel a few minims into the supposed cavity, then gently withdraw the piston, and if a collection of fluid exist, we are practically sure to obtain a specimen of it for naked eye or microscopic identification. He first tried this plan in a case where only a negative result could be obtained by the ordinary method, though the pus flowed freely when it was diluted. Since then he has used it in a large number of cases with the view of testing its value, and has never failed to satisfy himself with a single puncture. There is rarely any necessity to expel more than about three minims of water, but, if this fails, the piston may be driven further home, or even worked in and out several times.

Dr. King thus summarizes the advantages of his method: 1. The needle is cleared. 2. The tension of the fluid is increased. 3. The fluid is rendered thinner.

When a syringe is used in this manner, great care is necessary in thoroughly cleaning and disinfecting the barrel after each injection.—*British Medical Journal*, January 11, 1890.

Codeine in Ovarian Pain.—DR. FREUND, of Strassburg, has recently used codeine in a large number of cases of abdominal pain from various causes, with the view of testing the assertions of Dr. Brunton that the drug is of especial use in intestinal or pelvic pain. His results seem to indicate that Brunton's views are somewhat exaggerated.

Pain from acute uterine affections, such as dysmenorrhœa, Freund found, was not as quickly relieved with codeine as with morphine, and the relief was of shorter duration. In pain from pelvic exudates and tubal disease the drug was also of but little value. In ovarian pain, however, whether from prolapse, oöphoritis, perioöphoritis, or neuralgia, the relief afforded by codeine was prompt, unmistakable, and more or less permanent even when small doses were given. The amount usually administered was about half a grain three times daily in pill form, and in but few cases was it necessary to increase this quantity. His experience coincides with Brunton's that no disagreeable or harmful effects follow the use of the drug. It does not stupefy, diminish the appetite, nor constipate. He prescribes the pill for one month after an attack of ovarian pain, and warmly recommends the drug for the above conditions.—*Therapeutische Monatshefte*, November, 1889.

Three Diagnostic Signs of Melancholia.—In the simple form of melancholia, as is well known, there is melancholy, which is usually unattended by delusions, hallucinations, or illusions, although there may occasionally be delusional or hallucinatory tendencies, but there is none of the agitation or stupor of the other forms. The simple forms of melancholia are often extremely difficult to diagnose, especially in the early stage, as the reasoning powers, the memory, and the perceptions are then often seemingly unimpaired, or not more affected than is possible from many unimportant causes. Patients suffering from this mental disease frequently figure as neurasthenics, and are confidently treated as such until some determined and frightful suicidal or homicido-suicidal attempt throws startling light upon the true nature of the malady. These, too, are the cases of mysterious suicides which are accounted for on some theory of

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rejected love or high-flown sentimentalism. Any certain diagnostic symptoms in this class of cases should be for these reasons of value. In sixteen cases of melancholia which have come under the observation of DR. LANDON CARTER GRAY in the last eighteen months, he has found three constant symptoms, viz., melancholy, marked insomnia, and a post-cervical ache. The post-cervical ache is an aching pain in the back of the neck and head, and sometimes extending to the shoulders. It is usually described as a distress or ache, although it may occasionally be neuralgic in its character, and not infrequently passes into neuralgic paroxysms which will last for a day or two.

The insomnia is usually one of the earliest symptoms of the disease, but has no especial characteristics.—*Journal of Nervous and Mental Diseases*, January, 1890.

The Surgical Treatment of Tubercular Peritonitis.—In the *Centralblatt für Chirurgie*, No. 40, 1889, SPAETH holds that the statistical results of the operative treatment of peritoneal tuberculosis must be received with considerable reserve, owing to the absence of identification of tubercle bacilli. Of four cases in Prochownick's clinic, in which the tubercular nature was thus proved, one died early from collapse, and the other three within a few months from general tuberculosis. Although he does not on this account deny the possibility of cure, Spaeth believes that the statistical results are doubtful. He submits the following propositions:

1. In primary abdominal tuberculosis, without implication of other organs, laparotomy is satisfactory.

2. In peritoneal tuberculosis, with involvement of the female generative organs, the operation has as yet given no definite results, whether these organs have or have not been removed.

3. If the intestines be involved the operation is only palliative.

4. In genital tuberculosis, without peritoneal invasion, operation should be performed as early as possible, but an early bacterial diagnosis is difficult to obtain.

5. Primary peritoneal tuberculosis is much rarer than is generally supposed, hence the diagnosis should be made with care, and only accepted if confirmed by bacteriological observation.—*Medical Chronicle*, January, 1890.

The Extirpation of Benign Tumors of the Thyroid.—The excellent results obtained by MR. CHARTERS SYMONDS in his treatment of these growths by extirpation, as detailed by him at a recent meeting of the Clinical Society of London, will serve to draw the attention of other surgeons to the method of treatment therein recommended. Mr. Symonds laid stress upon the following points: The median incision is to be made in all cases and the capsule of the cyst to be looked for—as a rule, it is at once seen if the tumor be superficial, or a part of it projects beyond the margin of the gland; when the cyst is found to contain fluid, all is to be evacuated and the cyst peeled out, or, if the tumor be solid, it is to be enucleated. In some cases the margin of the gland must be raised up. In two of Mr. Symonds's cases the lobe was removed on the supposition that the growth was incapsuled intimately; but afterward this was not found to be the case. All his eight cases did well, primary union resulting in every one of them; and there was no hæmorrhage in the simple cases. The rapid recovery of his patients generally contrasts favorably with the much slower progress of patients treated by other methods. Thus, tapping and injecting with perchloride of iron is apt to produce hectic, and some patients thus treated have almost lost their lives. In fact, when much solid material exists in the growth injection is unsuitable. If such cases be treated by injection, serious results are likely to occur. If the cyst be opened and sutured to the skin, and stuffed, the case is long under treatment, the resultant scar is large, and there is more danger than when excision is performed. Possibly a small incision and scooping out of the tissue may in some cases succeed; but it appears to be attended with much danger of hæmorrhage. In one of Mr. Symonds's cases which was exhibited, the cicatrix was only an inch and a quarter long, although an adenocystoma, measuring three by two inches, had been removed. In this case the fluid had been first evacuated, after the manner recommended.—*British Med. Journal*, January 11, 1890.

The Treatment of Chronic Prostatitis.—PROFESSOR HENRICH KÖBNER, of Berlin, has for some time used, with good results, the iodide and bromide of potassium, administered by the rectum, in the treatment of chronic prostatitis. At first the salts were administered with cocoa butter in the form of suppositories. These, however, frequently caused irritation and burning of the rectum, which was due to the fact that the suppositories were slow in melting. For this reason he now uses the drugs in solution as enemata. The formula which he recommends is as follows:

℞.—Potassium iodide . . .	4 grains.
Potassium bromide . .	3 to 4 "
Extract of belladonna . .	⅓ grain.
Water	5 drachms.

This amount is to be added to from 1½ to 3 ounces of warm water and injected once, later twice, daily. Further in the course of treatment the iodide and bromide may be increased to three times the above amounts.—*Therapeutische Monatshefte*, November, 1889.

Sulphur in the Treatment of Diphtheria.—Sublimed sulphur is strongly recommended as a local application in diphtheria, by DR. CHARLES SMITH, of Australia (*Australian Medical Journal*, December 15, 1889). The throat is first mopped with a solution of tannin in glycerin; simply painting with a brush is not sufficient, as the object is to remove the membrane as far as possible, and to leave a sticky surface. A small quantity of sulphur is then insufflated upon the diseased surface, and as it should remain there for at least fifteen minutes, the patient is neither allowed to expectorate or swallow for that length of time. The author considers it essential to repeat this at least every hour, day and night. The small amount of sulphur swallowed occasionally relaxes the bowels, but not to a great extent, unless larger amounts than necessery are used. According to Dr. Smith, with this treatment the diphtheritic process usually quickly ceases to spread and begins to improve within forty-eight hours, though appreciable change is not always so rapid. How this method of treatment is applied in cases of laryngeal diphtheria does not appear from the paper in question.

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THE TREATMENT OF SYMPTOMATIC HÆMORRHAGE.

PROBABLY no symptom is more alarming to the friends or, as a rule, a source of greater anxiety to the medical attendant than hæmorrhage. Its immediate checking naturally seems to the bystanders the first duty of the physician, yet in many cases it would be far better for the patient to lose some blood and so have the benefit of nature's method of relieving, by this safety-valve leakage, the diseased condition of some organ, than that the hæmorrhage should be controlled by medicinal or other treatment. Urged by the patient's friends, and feeling the "necessity of doing something," the physician mayhap often controls the hæmorrhage to the detriment of some diseased organ whose relief could be secured in no other way so speedily or completely as by the drain of blood from the overfilled vessels.

In hepatic disease attended by portal obstruction the rectal hæmorrhages, often too actively treated, may relieve symptoms which otherwise might be overcome with difficulty or not at all. By epistaxis nature often takes it upon herself to relieve intracranial congestion and, if read aright, will offer material assistance as an indication of the proper mode of treatment to be adopted. Many other examples of this safety-valve leakage from over-distended vessels might be adduced. In all cases to treat hæmorrhage as hæmorrhage, and not as a possible symptom of disease of deeper origin, is as irrational as to treat all headaches with nerve sedatives. In the *Gazette Hebdomadaire de Médecine et de Chirurgie* for November 8, 1889, is an excellent article by Guinard upon the treatment of hæmorrhage from other than large vessels. He relates several cases of epistaxis cured by the application of a vesicatory over the hepatic region. In some of the cases so treated the diagnosis of hepatic disease had already been made; in these the hæmorrhage was arrested by the measure employed; in others the cessation of hæmorrhage after the application to the area named led to the detection of previously unrecognized hepatic disease; in a third class the application failed to control the hæmorrhage, and in these no hepatic lesion was present. He also relates cases of hæmorrhage due to malarial infection and to disease of the kidneys, which ceased under treatment applied to the underlying cause.

Epistaxis is so frequent an occurrence in apparently perfectly healthy individuals, and of itself is so seldom of serious consequence that we may, unless we are constantly on our guard, pay attention to the surface play without considering its significance as the outward and visible sign of some causative visceral disease. As with coryza, so with epistaxis the symptom may be heroically attacked, leaving the underlying renal disease to pursue its course unnoticed.

The rational method of treatment is to remove the cause of symptoms produced, and only after careful investigation of other organs, that could be capable of producing the symptom, should the hæmorrhage be considered as idiopathic and due to some local condition.

Were we to picture fully to ourselves the physical condition of the diseased organs that we have to deal with, and, so to speak, to put ourselves in their place, we might often change materially our plan of attacking the symptoms presented.

Too often does the physician, urged (perhaps against his will) to stop the hæmorrhage, turn with confidence to ergot as the great hæmostatic, and in giving the remedy feel that he is "doing something" to the quieting of his own conscience and of the clamor of the patient's family. No matter from what source the hæmorrhage may come, or to what cause it may be due, ergot is looked upon by many as the panacea for hæmorrhage. From the fact that uterine hæmorrhage is controlled by ergot,

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the conclusion is drawn that all hæmorrhage can be surely and safely checked by the same means; yet probably the action of ergot as a stimulant to the contractile power of the uterine tissue has more to do with its ability to stop post-partum or other hæmorrhage from the same organ, than has any hæmostatic property possessed by the drug.

That ergot is a powerful vaso-motor stimulant makes it of vast value in the treatment of such hæmorrhage as arises from disease of the vaso-motor system in which subcutaneous, submucous, or external hæmorrhages occur. Here its action is intended to affect the whole bloodvessel system of the body, and its use is rational. It is far different when we have to deal with hæmorrhage due to the rupture of a vessel from local disease of its walls or of the surrounding tissue. By giving ergot in the latter condition we increase blood-pressure enormously by contracting *all* of the arterioles of the body, we increase the strain upon the diseased and weakened vessel-wall as well as upon those of the healthy vessels, and we must of necessity not only render further rupture possible, but also increase the outflow from the bleeding vessel, thereby perhaps destroying the chance of clot-formation, by which alone the leak can be repaired. It is impossible to see how ergot could have any selective action upon the ruptured vessel, picking it out from the rest and diminishing its calibre, and it is but natural to believe that a vessel so diseased as to suffer rupture of its wall, cannot contract so well as do the healthy vessels throughout the rest of the body.

If the above view is correct, it is improper to administer ergot for the checking of hæmoptysis, and unwarrantable to attempt to prevent a recurrence by repeated doses of the drug after the first leak has been plugged by a clot. In cerebral apoplexy the same remarks would apply with even more force, as we have here to consider the fact that the more fully the cerebral vessels are dilated, the less room is there for the accommodation of the outpoured blood, and that by contracting the unruptured bloodvessels we not only increase the force of the blood stream through the already ruptured vessel, but also make room for more blood to be poured out, and invite its exit through the rent. It is not the blood *in* the cerebral vessels that causes the damage, it is the blood *outside* of them.

Were a leak to occur in a branch of the conduits leading from a reservoir of water, the method adopted to check the outflow would surely not be to narrow or occlude all other branches, or to remove all external opposition to the free discharge from such a leak; yet with local disease of one part of the vascular system the analogy will hold, as the atheromatous and friable cerebral vessels, and the thickened infiltrated vessels in the walls of a pulmonary cavity certainly cannot be capable of much contraction under the influence of ergot or any general vaso-constrictor.

Far better is it to quiet the strength of the blood current, to divert the stream so far as possible into healthy channels widened for the reception of as much blood as is possible, to quiet the heart's action and so allow nature unopposed to attempt to plug the leak by clot-formation.

With some modification the same method of reasoning applies to the use of ergot in the hæmoptysis of mitral disease, where by the administration of the drug all of the arterioles are contracted, and thereby more obstruction opposed to the blood flow from the already incompetent heart. Here the method of attacking the cause would be by aiding the heart to keep up the lesser circulation, while at the same time endeavoring to lessen, instead of increase, the *vis-a-fronte* in the greater circulation. A severe, but not fatal, hæmorrhage, if unchecked by medicinal measures, continues until syncope occurs with practical absence of blood-pressure. If the syncope or rather the low blood-pressure, last sufficiently long, clot-formation occurs at the bleeding point and the hæmorrhage ceases. If the patient be raised from the recumbent posture, hæmorrhage may recur from the rise of blood-pressure produced by the change of position sweeping out the clot that may have formed. The pointings of nature are always wise and safe, and the more we assist instead of opposing her and the more we attempt to imitate her methods, the more rational will be our treatment and the more certain our results.

THE UNITED STATES PHARMACOPŒIA OF 1890.

THE fact that the United States Pharmacopœia of 1890 is about to be acted upon by the decennial convention next spring, should excite very considerable attention among the members of the medical profession everywhere. It is of the gravest importance that the physicians of the United States should send as representatives to Washington a band of men who will be representative of all that is practical and nothing that is commercial. At the last

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revision, the commercial element was so strong that science had little or no standing, simply because the physicians who should have been there failed to appear, either through lack of interest, fear of expense, or because the various medical bodies of the country had not sent delegates properly accredited. There is no doubt, however, that the physician should have a large amount to do with such a task, for it is his practical application of remedies that forces the pharmacist to keep on his shelves the drugs required. He alone can separate, by reason of his experience, the useless drugs from the good, and is best qualified to state what new ones shall be inserted in the list. Once more, it should be remembered that purely commercial or business principles animate the druggist, who is only an educated tradesman, carrying on his business solely with the idea of large pecuniary recompense. That such reward is sought after by the majority of physicians is of course true, and were it not for the well-known lack of business forethought of professional men, they would see that an immense amount of pecuniary loss may ensue if they are listless and careless in regard to this most important subject. To any one who has given it a half hour's thought, it must be evident that all leaves, rhizomes, roots, or flowers of a plant must of necessity vary greatly in the quantity of the medicinal substances which they contain, and it has been proved again and again that fluid extracts vary as much as twenty per cent. in the amount of their active principles. Even such a commonly used drug as aconite has been found to vary from one to twenty per cent. in a dozen stores in New York and Philadelphia. The reason of this is evident when we remember that nothing is required of the druggist by the Pharmacopœia as to the strength of the crude drugs employed, and that the temptation must always be to buy the cheapest raw materials rather than the more highly priced assayed leaves or roots. The physician has too often to submit to unjust criticism because his patients fail to be benefited by the treatment they receive, and everyone sees cases get well after using a certain drug given by one doctor, although it has failed in the hands of another, simply because in one case the preparation used was poor and in the other good. Aside from the mere pecuniary loss entailed, the questions of life and death, humanity and personal confidence are at stake.

The query as to the manner in which this crying evil is to be put down is difficult of solution. Fortunately we are possessed of the alkaloids of most of the remedies generally employed, and these should be resorted to in all cases where doubt can possibly exist. Be the means what they may, some clear, distinct plan of action should be reached when the wise-heads of the convention come together, which will do away with uncertain therapeusis and give the physician reliable tools with which to practise his calling.

REVIEWS.

THE NATIONAL MEDICAL DICTIONARY; INCLUDING ENGLISH, FRENCH, GERMAN, ITALIAN, AND LATIN TECHNICAL TERMS USED IN MEDICINE AND THE COLLATERAL SCIENCES, AND A SERIES OF TABLES OF USEFUL DATA. By JOHN S. BILLINGS, M.D., LL.D., Edin. and Harv., D.C.L. Oxon., with the Collaboration of W. O. ATWATER, M.D.; FRANK BAKER, M.D.; S. M. BURNETT, M.D.; W. T. COUNCILMAN, M.D.; JAMES M. FLINT, M.D.; J. A. KIDDER, M.D.; WILLIAM LEE, M.D.; R. LORINI, M.D.; WASHINGTON MATTHEWS, M.D.; C. S. MINOT, M.D.; H. C. YARROW, M.D. Two volumes. Philadelphia: Lea Brothers & Co., 1890.

FAMILIARITY with the workings of the plan upon which these volumes have been constructed, attained after long-continued use of their contents, is the only trustworthy criterion upon which to base a thorough review. Inasmuch as sufficient time has not elapsed to permit the employment of such a test, two substitutes offer themselves—comparison with other works of similar character, and a necessarily limited search for words, phrases, and abbreviations as they are encountered in the medical literature of the day.

The labor of comparison quickly demonstrates that this work in accurate derivation, concise definition, and general adaptability, is the equal of all rivals and the superior of the majority. The search for terms current in medical literature reveals that the object of the Dictionary to supply those in use "in English, French, German, and Italian, including the Latin medical terminology of all these languages," has eventuated in a satisfactory consummation. Perhaps the most striking feature, in addition to the industry which has gathered practically every medical term in current use, is the rare skill in condensation which is displayed, so that each definition is concise, often necessarily brief, without, however, sacrificing clearness to this brevity. This commendable feature will appeal to every man who does not turn to a dictionary to find lengthy essays upon the words it contains, or go to an encyclopædia to hunt for mere definitions and synonyms. It would be comparatively easy to point out numerous characteristics which readily attract the busy student—the satisfactory method of cross references, the redefinition of synonyms of dissimilar form and orthography from the commonly used term, the association of the French, German, and Italian synonyms of important English and Latin names with the prime word, and the system of indicating pronunciation.

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In addition to the "Dictionary-portion" of the volumes, a series of useful tables has been prefixed. These consist in tables of doses, poisons and their antidotes, the numbering of spectacle-lenses, tables showing the expectation of life, the relation of the girth of the chest to increasing height, the dimensions and weight of the organs of the human body, and comparative scales giving the equivalent of ordinary weights and measures in those of the metric system, as well as the comparison of thermometric scales. This section closes with the tables of foods and dietaries prepared by Professor W. O. Atwater.

The typography of the work is excellent. Each double-columned page, with its clear type, liberal spacing, and satisfactory indentations is grateful to the eye of him who reads, and a beautiful example of the publishers' wisdom and the printer's art.

Dr. Billings and his collaborators have built a Dictionary for which, without wishing to be unseemingly eulogistic, we have no words but praise. It fulfils all reasonable requirements and meets all sensible expectations. It cannot merely take rank with the standard works of the same character which have preceded it, because it outranks the majority. It at once assumes the position of a model to which all future efforts in a similar line must look for inspiration.

SOCIETY PROCEEDINGS.

M'DOWELL MEDICAL SOCIETY.

Twenty-ninth Semi-annual Meeting, held at Henderson, Kentucky.

MORNING SESSION.

The Society was called to order at 10 A. M., by the President, Dr. John E. Pendleton, of Hartford, Ky.

DR. A. MORGAN VANCE, of Louisville, read a paper on

ANTISEPTIC SURGERY,

in which he said that in the past ten years the great progress of surgery has been in proportion to the increased understanding and confidence in the power of antiseptic and aseptic methods of wound treatment. The day is not far distant when the surgeon will be ashamed to admit the formation of pus in a wound of his making, as he will know that it is from neglect that pus appears. The technique, he said, is to be acquired by reading the medical journals of the day, and making trials of the methods there described.

Dr. Vance then directed the attention of the members to the importance of certain details in the following words:

Don't fail, when possible, to have a general bath before doing a major operation.

Don't do any operation with suspicious hands; hot water, soap, nail-brush, and penknife should be carefully used by the principal and assistants before any operation. It is best to cut the nails very short, so there will be no place for germs to lodge.

Don't, just before or during an operation, put the fingers about your nose, eyes, or ears, or use a handkerchief, or shake hands with any one.

Don't pick up, or allow an assistant to touch, any instrument, sponge, or suture that has fallen to the floor during the operation.

Don't bite off the end of a suture that it may the more easily be threaded.

Don't put a knife or other instrument in the mouth, or behind the ear, preparatory to its use.

Don't cough or sneeze over the operative field.

Don't fail, when possible, to have the patient bathed and clothing changed before an operation. When this is not possible, thoroughly cleanse the field, and never make or dress a wound where the surrounding parts have not been shaved.

Don't allow any visitor to handle the field of operation, after the patient is prepared, unless he is aseptic.

Don't allow visitors who are attending patients with gangrene, erysipelas, or puerperal fever to be present.

Don't fail to have the field of operation surrounded by warm sublimated towels.

DR. I. N. LOVE then made some remarks on the

MANAGEMENT OF FEVERS.

He said that all the cases of fever which come under our observation, after it is well established that they are continued fevers, no matter what the cause, require management rather than medication, though there are times when medication is an important part of the management. In fever cases the first step in treatment should be to clear out the sewers of the patient, keeping open the secretory and excretory organs, by giving full doses of calomel with compound jalap powder, followed by some saline purgative. Sometimes this in itself will overcome the fever, and then proper measures should be taken to prevent its recurrence.

The ice-water and milk given fever patients should have been boiled and kept hermetically sealed in an ice-chest. Cleansing the mouth and teeth are important factors, and no patient with typhoid fever should be allowed to have sordes on the teeth. An item of vital importance is tranquillity of both mind and body. Friends should not be permitted to see fever patients. The physician should insist upon the patient using a bed-pan, and saving muscular effort. With a view to producing this tranquillity, the administration of medicines which produce sleep are of great value. In controlling temperature the speaker highly recommended acetanilid, as he has used it in a large number of cases with very satisfactory results. Given in doses of two and a half grains, every two to four hours, to an adult, it reduces temperature at least one and a half degrees, and keeps it down. The speaker gives it in the form of a solution, with brandy or Tokay wine, which makes an ideal stimulant. He also alternates the sponge-bath with the administration of acetanilid.

Quinine, as an antipyretic, should be ruled out unless there is a malarial element, for the drug disturbs the nervous system and alimentary canal, and impairs digestion and nutrition.

Dr. Love, in closing, favored the pre-digestion of all foods for fever patients for various and obvious reasons, which he gave at considerable length. Bovinine is very satisfactory in such cases, as it is well received, well retained, and is unquestionably very nourishing.

DR. J. E. PENDLETON, of Hartford, Ky., read a paper on

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TREPHINING, WITH REPORTS OF CASES,

in which he said that trephining in itself is not a dangerous operation, but that it is usually done for the relief of some injury or pathological condition which either impairs the health or imperils the life of the patient. Operations done for the relief of epilepsy are more nearly fair examples from which to calculate the mortality rate than any other class of cases that have been recorded, but even in these, if the epileptic seizures be due to old traumatisms of the skull, with spiculæ of bone or exostoses impinging upon the brain or its membranes, they should be excluded. It has not been the author's fortune to be called to use the trephine for tumors or epilepsy, and his experience with the instrument has been for the most part confined to recent traumatic injuries of the head. He then reported five cases upon which he had successfully operated.

Dr. Pendleton concluded by saying that though much had been learned and published within the last two decades upon the functions of the cerebral centres, we are not yet in possession of sufficient knowledge to shield us from the danger of making mistakes in locating cerebral lesions. The very complex anatomical arrangement of the nervous centres and their conducting tracts; the facts that two or more areas may be intimately connected with the same function, and that lesions of the same location in different individuals may not produce like definite results, conspire to hinder correct diagnosis. Tumors and abscesses deeply embedded in the brain substance and which would inevitably have destroyed life have been extirpated or evacuated and the patients restored to health. Perilous as may seem these daring ventures in brain surgery, the author said that those cases whose lives are made miserable by constantly recurring fits of epilepsy, and otherwise incurable, will gladly avail themselves of almost any operation to get rid of their malady. In depressed fractures, in subdural hæmorrhage, or in traumatic abscess, if the focal symptoms are of a positive character, there should be no hesitation about operating.

Judging from his own observation and the information he had gathered concerning the conditions of the skull and brain for which trephining may be done, he could only say that the propriety of operating depends chiefly upon our ability to make a correct diagnosis.

DR. E. H. LUCKETT, of Owensboro, Ky., read a brief paper on

THE DUTIES OF MOTHERS IN NURSING THEIR CHILDREN.

He said that in investigating the operation of natural laws we cannot fail to observe the mutual relationship and reactions which they produce in their fulfilment, and that this relationship holds good whether they are acting rationally or aberrantly. In no field of their operation is this to be more observed than in the laws regulating biological processes or pathological divergencies. Each law as it applies itself to the development of functional activity in this or that organ is aided by its relationship. In but few organs is this law more beneficently displayed than in the milk glands and the uterus, where the one has for months been caring for a growing, and the other developing for the care of the infant in its independent existence. To set this order ruthlessly at defiance is to invite serious disaster to the woman and greater perils to the child. There is no condition of humanity more to be deplored than that arising from the pathological conditions following childbirth, and among the many causes for these disturbances, failure to nurse stands out boldly and forebodingly. That every mother should nurse her child—except from want of milk or grave disease—will not be gainsaid; it is the demand made by the law of her condition and she cannot shrink from the task or transfer the responsibility without inviting injurious results to herself and taking large chances for physical and mental defects to her child, entailing upon it a puny existence and too frequently an early death. With women who were unable to nurse their children pregnancy might occur every ten to fifteen months, subjecting her to all the mental anxieties, all the nerve perturbations, both reflex and direct, and all the functional derangements incident to the condition almost continually during her sexual life.

Another accident arising frequently in the non-nursing woman is abortion, which is no doubt to a great extent the result of the frequent pregnancies to which such women are subjected. These abortions are fruitful causes of local pelvic troubles, both acute and chronic, and add largely to the list of penalties which women pay for neglect of duty, in discarding the motherly care of their offering.

DR. BRANSFORD LEWIS, of St. Louis, Mo., then read a paper on the

TREATMENT OF GONORRHŒA WITH OINTMENTS,

in which he deprecated the use, in the early stages of gonorrhœa, of astringents, caustics, or other means, antiseptic or otherwise, which would tend in any way to increase the irritation already present, giving as his reason that, aside from the irritation which they produced, they were inefficacious in reaching or killing the gonococci, the morbific agents, because of the location of the latter in the tissues. Admitting the inability to cut short a gonorrhœa in a few days or a week, he had devised a plan of treatment having for its object the conduction of the disease through its several stages as quickly, as comfortably, and as safely as possible, and nothing appeared to him to be more likely to attain these ends than the introduction of a bland ointment, medicated as desired. It is soothing to the inflamed membrane; it keeps the opposing surfaces from rubbing against one another, and in this way obviates all autoirritation. It affords a continuous application of any medicament, with but little trouble to the physician or annoyance to the patient.

Dr. Lewis then exhibited the instrument or applicator which he uses, and described it as a hard-rubber ointment box, fitted at one end with a screw-piston for pressing the ointment out of the other end into a soft-rubber catheter attached. The catheter, having three holes at its end, is a No. 2 French, sufficiently small, smooth, and flexible to glide for a half inch or so into the most sensitive urethra, generally before the patient knows that it is in. The ointment is then squeezed out, pressure being maintained around the glans, so that it is compelled to pass backward over the inflamed area. The catheter is then withdrawn and a muslin hood, lined with clean,

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non-absorbent cotton, is placed over the penis, and retains the application until the next urination.

Lately he had been using albolene, an ointment base which is such an inert substance that it neither changes nor becomes rancid with keeping or in combination with medicines. It is odorless and almost tasteless. He prefers it to lanolin because of the qualities mentioned, and is now using it exclusively and with perfect satisfaction.

DR. WILLIAM CHEATHAM, of Louisville, Kentucky, then read a paper entitled

PHLYCTENULAR OR SCROFULOUS OPHTHALMIA,

in which he said that in this disease the hygienic management and the constitutional treatment are of extreme importance, as the most frequent cause of the affection is bad hygiene. As to feeding, all sweets, tea and coffee should be interdicted. Fresh meat should, if possible, be given twice a day, but not at night, and the patient should be kept out of doors as much as possible. In the local treatment of phlyctenular conjunctivitis, frequent washing with carbolized water, hot or cold, as the patient prefers, is of great importance. A solution of two grains of sulphate of atropine in an ounce of distilled water should be dropped into the eye three or four times a day if the inflammation is severe, or if there is photophobia. If dry calomel can be dusted into the eye about noon each day, with a camel's-hair brush, it should be done, or the calomel may be mixed with pulverized white sugar, half and half.

EVENING SESSION.

DR. P. THOMPSON, of Henderson, made some remarks on the

HYGIENIC MANAGEMENT OF THE NEWBORN.

DR. G. FRANK LYDSTON, of Chicago, followed with a paper on the

EVOLUTION OF THE LOCAL VENEREAL DISEASES,

in which he said he was convinced that chancroid and gonorrhœa are diseases which may arise *de novo*, and which are, in the true sense of the term, not specific. It is only by an acceptance of this theory that it is possible to understand something of the origin of those diseases. It may not be possible to demonstrate the origin of all infectious diseases, but it is incomprehensible that a "specific" poison has always existed. The germ theory apparently throws some light upon the origin of infectious diseases. Diseases are incident to the life of every animal, and as we study the evolution of the animal, so should we study the evolution of its diseases.

He believed that the local venereal diseases are the result of the propagation and differentiation of germs primarily innocuous, and that the innocent germs of the atmosphere may multiply in a favorable environment, and the result of such multiplication finally become through successive cultures virulent. Thus the descendants of innocuous germs may have properties which are innocuous or virulent depending upon the environment in which they are developed.

The effects of the germ, even after it enters the tissues of the human being, vary according to (1) its virulency and vitality; (2) the inherent vitality of the individual affected; (3) idiosyncrasy; (4) activity of elimination; (5) the condition of the tissues; (6) the number of germs and length of time of exposure.

The experiments of Pasteur on chicken cholera show conclusively what may be done in the way of modifying germs by proper culture, and is it unreasonable to suppose that such cultivation may occur in nature's laboratory? As a consequence of the great variation in the circumstances controlling the development of germs in the female vagina, the essayist believes that there may result from different inoculations of essentially the same products of evolution different degrees of infection. Thus the disease acquired by exposure to such germs may be a simple balanitis, balano-posthitis or venereal vegetations, simple urethritis, virulent urethritis, simple venereal ulcer indistinguishable from advanced herpes, or, lastly, the true chancroid.

CORRESPONDENCE.

PARIS.

Influenza in Europe; Symptoms; Nature; Contagiousness and Treatment.

To the Editor of THE MEDICAL NEWS,

SIR: Influenza, the interesting disease of the moment, does not seem to be on the decrease in Europe. The reports from all the European capitals indicate, on the contrary, that the number of cases is on the increase, and, what is still more important, that the disease is taking a more severe form. The mortality has apparently doubled and tripled in every city where the disease has shown itself. The real nature of the disease does not seem to have been as yet determined; the greatest medical authorities of Europe are differing on this subject, some believing the affection to be influenza, others considering it dengue fever, while still others admit that the epidemic possesses characters common to both influenza and dengue.

As has been many times stated, the disease was first observed in Russia, where it appeared about the beginning of October. It first occurred in isolated cases, but soon, however, took the form of a true epidemic, which no sanitary measures could prevent. In Russia, the principal symptoms which were observed were as follows:

Most of the patients were taken suddenly, after one or several chills, with a temperature rising to 102° or 104° F. A few moments before this fever, however, the patient usually complained of severe pain in the frontal region. In others, the disease began after several chills, accompanied by a tired feeling, with severe headache, this lasting for twenty-four hours, at the end of which, the temperature reached its highest point.

Again, others felt ill for three or four days, or even a week; they complained of general muscular and intellectual fatigue, great irritability of the nervous system, headache, loss of appetite, sleepiness, etc. Others complained of sore throat of short duration. In young men, the disease usually started abruptly, while in elderly persons there always existed premonitory symptoms. For the first two or three days the patient complained of frontal headache, pain in the muscles of the posterior cervical region, in the sacro-lumbar region, in the legs,

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chest, cardiac region, abdominal parietes, or in the articulations. In some, nausea and repeated vomiting have been observed, also delirium. All patients presented more or less depression. Cough presented a convulsive character, dry, or accompanied by mucous expectorations. Most of these cases had the appearance of typhoid fever patients.

In three cases, at one of the St. Petersburg temporary hospitals, a diffused erythema was observed, resembling very much the rash of scarlatina, which, however, disappeared by the second day. In some cases, conjunctivitis, photophobia, and pain in the ocular muscles were noticed. The pharynx was more or less hyperræmic, while the tonsils and sub-maxillary glands were somewhat increased in size. The pulse was small and frequent. In regard to the lungs, bronchitis was observed, but rarely pneumonia. The liver and spleen were found increased in size. A slight amount of albumin in the urine was often discovered. On the third or fourth day the temperature usually fell, and there appeared a more or less profuse perspiration; in about half the cases the temperature went up again on the fourth, fifth, or sixth day, but this febrile state only lasted a day or two, when convalescence would begin.

In Belgium the disease began as elsewhere, by striking collections of people, such as are found in the large stores; in most of these more than two-thirds of the persons were attacked.

M. Renvers, of Berlin, as a result of his recent observations, divides influenza into three clinical varieties: The first is the violent form of the disease, with severe headache, pain throughout the body, and great elevation of temperature. In a few hours the headache becomes extremely painful, the patient complains of nausea, is agitated, face is flushed, and the temperature rises to 104° or 105°. Ten or twelve hours later appear the respiratory symptoms, then profuse sweats, and the disease finally disappears. During the short convalescence there is great fatigue, with pain in the limbs and back.

The second form presents an ascending temperature for one or two days; irregular pains in the limbs, violent cough, dry mouth, etc.; the cough is convulsive, and liable to bring on vomiting. Temperature remains at its maximum for two days, and then gradually descends, but it is from four to five days before all the catarrhal symptoms disappear.

In a third form symptoms appear simultaneously in the organs of respiration and those of digestion. In this form we find a predomination of the nervous symptoms, with loss of appetite. The temperature rises rapidly and the fever may last two or three days. At the beginning these cases resemble typhoid fever.

The complications observed are broncho-pneumonia and fibrinous pneumonia. This pneumonia is peculiar in not presenting rusty sputa nor great cough, but on percussion there is a certain amount of dulness. In some cases erythema of the skin has been observed.

M. Fürbringer, of Berlin, has observed 47 cases of influenza—40 men and 7 women, aged between 16 and 25 years—which is a contradiction of the ordinarily accepted theory that the disease is much more apt to seize elderly people. He has observed fibrinous pneumonia in only two cases, and admits the existence of an abortive broncho-pneumonia only when he finds traces of blood in the sputa. As regards treatment, he thinks the antipyretics useless, as the patients recovered without any active treatment. He does not consider the disease contagious, but rather thinks it a miasmatic disease, due to an organism in suspension in the air.

In Paris, as in the other large cities, the epidemic was first noticed in the largest dry goods store, which employs from 2500 to 3000 employés; the very first day over 300 were taken sick, and in three or four days two-thirds of them were ill. The sanitary physicians who were ordered to examine the character of the disease reported it as being influenza, or grippe. Since then the epidemic has spread over Paris, and markedly increased the mortality for the month of December. The disease in itself is not dangerous, but the mortality is due to the complications to which it gives rise when the patients neglect themselves. As an example of the increase of mortality, during the month of December, 1888, there were 3784 deaths in Paris; during the month of December, 1889, the number of deaths increased to 5969, which gives a difference of 2183 in favor of this year. Examining the statistics in detail, we find that in one week only 22 deaths are reported under the title influenza, while under the head pneumonia, which, in the corresponding week of 1888 gave a mortality of 67 deaths, gives this week 346 deaths; acute bronchitis, which gave 42 deaths, has this year 131; chronic bronchitis, 127 deaths, instead of 47; broncho-pneumonia, 138, instead of 27. The diseases of the respiratory organs have caused a total of 742 deaths, instead of 200, which is the ordinary number at this period of the year. Pulmonary congestion, phthisis, cardiac diseases, hemiplegia, old age—all present a high mortality, certainly due to the existing epidemic.

The question was brought before the Académie de Médecine, where Professor Sée stated that he thought from the result of his observations that the disease was of an infectious nature, having observed in most of the cases that there was an increase in size and a certain tumefaction of the spleen, as is found and observed in typhoid fever and malaria; and he even thinks that the pneumonias which are found as a complication of the influenza are of an infectious nature, as they do not present the ordinary signs of pneumonia—no rusty sputa are observed, very little cough, etc.

Dr. Dujardin Beaumetz states that the present is quite different from preceding epidemics; there are a few new symptoms which are not described as belonging to the disease. The disease begins abruptly, as does dengue fever; persons are taken in the midst of their occupations. In this epidemic two periods are also observed, as in the dengue fever. The first, called the nervous period, presents no catarrhal symptoms, but nausea, vomiting, agitation, even delirium, are observed. The second period resembles very much influenza, and is characterized by a catarrhal fever with mucous-membrane manifestations. Finally, Dr. Dujardin Beaumetz finds another resemblance to dengue fever, namely, the eruption and the physical and moral depression which are present.

The surgeons of the navy, who have had ample opportunity of studying dengue fever in regions where this disease prevails endemically, also find resemblances

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between it and the present epidemic. Even those who assert that the present disease is influenza, admit that it is an irregular form.

Professor Grasset, of Montpellier, is ready to admit that the disease is influenza, but a special form of influenza, which brings it very close to dengue fever.

Dr. Corre, of the French navy, although believing that the disease is influenza, yet says that it would not be illogical to admit that it is a hybrid, as the disease has originated in a country where the influenza and dengue prevailed at the same time, and that both these diseases have come to us mixed in different proportions, according to the climatic conditions.

Another surgeon of the navy, Dr. Dangny des Déserts, who has observed the disease on board a naval schoolship, concludes that the disease is not influenza, but an attenuated form of dengue fever. He says that the present disease begins much more like dengue than like influenza. In regard to the eruption, this is always present in severe cases of dengue, but it may be absent in light forms. In 1873 he observed in Cochin China a great many cases of dengue fever, and in a large number of light cases the eruption was absent. During the present epidemic he has seen scarlet eruptions followed by desquamation in several cases. As a conclusion, Dr. des Déserts says that the actual disease not only presents the symptoms of dengue as observed in the colonies in mild cases, but differs from influenza by the fact that coryza and inflammation of the bronchial passages are very often absent.

In Berlin and in St. Petersburg several physicians still hesitate between the nature of the disease. What everyone seems to admit, however, is that the influenza observed at present does not occur with all the classical symptoms usually encountered; it is an abnormal influenza—perhaps even an unknown or not yet described disease.

As regards prognosis, Dr. Dujardin Beaumetz thinks it favorable when a healthy organism is involved, but, on the contrary, very grave when it strikes a broken-down constitution, and in certain cases it will accelerate the fatal termination of an already existing disease.

Certain physicians claim that the rash which has been observed in several cases of influenza was due to the internal administration of antipyrin; Professor Sée and several other practitioners have found the rash only on persons who took quinine.

In certain cases, the complications extend toward the middle ear, causing deafness and otitis; in one case, the inflammation was so great as to produce an inflammation of the mastoid cells, which required trephining of the mastoid process.

At Copenhagen, an unusual complication has been observed; the nasal inflammation which usually announces the disease, extends to the larynx and there becomes so intense, that œdema of the glottis has resulted and several tracheotomies had to be performed.

Great difference of opinion has been expressed as to the contagious character of the disease; the medical societies of Berlin and Paris seem to consider it non-contagious, while certain well-observed facts render its contagious character almost out of question. Professor Grasset, of Montpellier, has obtained the following observation from Dr. Bordone. A gentleman left Paris to go to Frontignan, where he arrived on December 15th, and was immediately taking sick. On the 17th he gave a dinner to which ten persons were invited. On the 19th five out of these ten persons were taken. On the 18th he resumed his work. His second clerk, who resided several miles from Froutignan, was taken on the 21st and remained at home four days. On the fifth day of his disease, his mother, who nursed him, was taken sick. Up to the 15th not one case had been observed, and on December 24th there were 16 cases in Frontignan, and 6 in the neighboring village mentioned above. This certainly proves that the disease is communicable from one person to another.

The best example of contagion, however, is the one reported by Dr. Dangny des Déserts, who is the head surgeon of the naval school ship "La Bretagne," which has a crew of eight hundred and fifty men. From December 14th to January 1st, he has treated two hundred and fourteen patients. Two other naval school ships which are anchored very near, have had no case of the disease; hence the epidemic on board "La Bretagne," cannot be of a climatic nature. The way in which the contagion took place is explained as follows: On December 11th, a naval officer residing in the town, received two large boxes from a grocer in Paris. The boxes contained small cans which were enveloped in wood chips or shavings. Dr. Déserts took them out of the box; three days later he was seized with influenza; the following day, his wife and three servants presented symptoms of the disease. On December 14th this officer, still suffering from the disease, came on board "La Bretagne," where he remained twenty-four hours. On the 17th the epidemic was established, from twenty to forty-five men a day, presenting themselves at the infirmary. All the officers who were permitted to leave the ship, to be treated at their home, communicated the disease to their families.

In regard to the treatment: The usual method adopted seems to be to give the patient a purgative mineral water at the beginning of the attack, while at the same time antipyrin, fifteen grains, is given if the headache is severe, and if the fever is high.

Another treatment has also lately been recommended; this is based on the hypothesis that influenza is an infectious disease; and as the disease, in many cases, has taken an almost strictly abdominal form, intestinal antiseptics such as have been recommended by Professor Bouchard in typhoid fever, are being used.

As soon the patient has the first attack of fever, he must be given every hour four grains of salol, until thirty grains have been administered or even forty-five grains in an adult; three times daily ten grains of naphthalin are given.

In eight cases out of ten, the fever will disappear after the first day of this treatment, which should be continued for four or five days.

Persons or patients who were already taking either salol or naphthol for some other purpose, have very rarely contracted influenza.

The treatment which is recommended by Dr. Dujardin Beaumetz is as follows:

In case, where there exists a great deal of pain, antipyrin and exalgine are the remedies which give the best results. Thirty to forty-five grains of antipyrin are adminis-

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tered in a hot punch or in tea and rum. The following formula he recommends for the use of exalgine:

℞.—Exalgine	37½ grains.
Tinct. of peppermint . . .	ʒijss.
Syrup of orange flowers . .	ʒj.
Water	ʒiv.—M.

A teaspoonful every morning and evening. If there there is periodical fever, quinine is to be used, four grains of the hydrochlorate morning and evening.

In the catarrhal form, he recommends tincture of aconite, taken three times a day as follows:

In a cup of milk put two tablespoonfuls of sirup of tolu; one teaspoonful of cherry laurel water; ten drops of the French tincture of aconite root. This mixture to be given three times a day. As a continuous drink for the patient tea seems to be best supported.

Of course, if the febrile, painful or catarrhal forms of the disease, are associated, the above mentioned drugs should be combined accordingly.

THE MEDICAL SOCIETY OF SOUTH CAROLINA.

To the Editor of THE MEDICAL NEWS,

SIR: On the 9th day of December, 1889, the Medical Society of South Carolina celebrated its one hundredth birthday. This Society is the third oldest medical society in the United States, it being antedated by that of Massachusetts and the College of Physicians of Philadelphia. Among its founders was David Ramsay, the noted physician and historian, who was a native of Pennsylvania, and one of the earliest, if not the first graduate from the University of Pennsylvania. This Society has always held an honored position in South Carolina, and many of her sons have been known not only throughout this country but in Europe. For many years her members constituted the Board of Health, and were always consulted by the city authorities upon all sanitary matters. In 1724 the Society obtained from the General Assembly a charter for a medical college—the original medical college of this State—the Medical College of South Carolina. The professors were chosen from the members of the Society, and students applying for their degrees were examined before and by members, and the degrees were conferred by the Society. Finally, a controversy arose between the professors and the Society, which ended in the former resigning their chairs, obtaining a charter for a new college, called the Medical College of the State of South Carolina. This prospered, and though the Society filled the vacant chairs of the original college with bright minds from at home and abroad, its day was over, and it finally succumbed, leaving the new College in a flourishing condition. From it many eminent men have been graduated, and it is still pursuing its mission.

The Society celebrated its centennial by an oration which was delivered by Dr. Cornelius Kollock, of Cheraw, S. C., and afterward adjourned to partake of a handsome banquet at the Charleston Hotel.

The Roper Hospital, supported by the Roper Fund, for which the members of the Society are the trustees, is being repaired after the damages caused by the earthquake, and will, in all probability, be opened at no very distant date.

The officers of the Society for the ensuing year are as follows: President, T. Grange Simons, M.D.; Vice-President, R. L. Brodie, M.D.; Treasurer, J. L. Dawson, Jr., M.D.; Secretary, Charles M. Rees, M.D.; Librarian, Walter P. Porcher, M.D.

ST. PAUL AND MINNEAPOLIS.

To the Editor of THE MEDICAL NEWS,

SIR: There have not been many events of interest in a medical way in St. Paul or Minneapolis lately.

Dr. Vincent J. Hawkins, of St. Paul, has performed a Cæsarean section upon a dwarf, and both mother and child are alive and well.

The patient was seventeen years of age, 3 feet 5 inches tall, measured 30 inches around the hips and weighed 55 pounds. The conjugate diameters were 1¼ inches, the lateral diameter 3¼ inches.

The operation was begun two hours after the onset of labor pains and was performed in the usual manner, with antiseptic precautions. The patient suffered from collapse during the first twenty-four hours, and the highest temperature was reached on the fifth day: from this time she made an uninterrupted recovery.

The Medical Department of the University of Minnesota has started out with a class of eighty-seven students, and is flourishing.

Dr. Van der Horck, of Minneapolis, has under his care two cases of leprosy of the tuberculous variety; they are both Swedes; the older one is totally blind and suffering from tuberculosis of the lung.

It may interest the graduates of Jefferson Medical College to know that our State Board of Examiners has refused graduates of that school admission to our State examinations for license to practise medicine in Minnesota, on account of the shortness of the course of study. Our State law requires that to be eligible for examination, the candidate must be a graduate of a medical school having a graded course of at least three sessions of six months each.

A CORRECTION.

To the Editor of THE MEDICAL NEWS,

SIR: In looking over an article "Three Cases of Appendicitis; Operation; Recovery," by J. M. Baldy, M.D., of Philadelphia, which appeared in THE MEDICAL NEWS for November 23, 1889, I notice that on page 580 he makes the following remark: "In this case (mentioning my name) the appendix itself, after being freed from its adhesions, was allowed to remain, it being considered healthy enough to do no harm." Dr. Baldy must certainly have forgotten the operation, for the *appendix was ligated and cut off*, and moreover I have the *identical appendix in a bottle of alcohol* in my office.

Yours truly,

EUGENE P. BERNARDY.

NEWS ITEMS.

Regulations of the Tenth International Medical Congress.—The following are the more important regulations of the Tenth International Congress:

I. The Tenth International Medical Congress will be opened in Berlin on Monday, August 4, 1890, and will be closed on Saturday, August 9th.

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II. The Congress shall consist of legally-qualified medical men who have inscribed themselves as members, and have paid for their card of membership. Other men of science who interest themselves in the work of the Congress may be admitted as extraordinary members.

Those who take part in the Congress shall pay a subscription of twenty marks (five dollars) on being enrolled as members. For this sum they shall receive a copy of the *Transactions*, as soon as they appear. The enrolment shall take place at the beginning of the Congress. Gentlemen may, however, be enrolled as members by sending the amount of the subscription to the Treasurer,[1] with their name, professional status, and residence appended.

III. The object of the Congress is an exclusively scientific one.

IV. The work of the Congress will be discharged by eighteen different Sections. The members shall declare, upon enrolment, to which section or sections they intend more particularly to attach themselves.

V. . . . . .

On account of the different languages employed, a suitable number of secretaries shall be chosen from among the foreign members. The duties of the foreign secretaries shall be confined to the sittings of the Congress.

After the termination of the Congress, the editing of the *Transactions* shall be carried out by a committee specially appointed for this purpose.

VI. The Congress will assemble daily, either for a general meeting or for the work of the different sections. The general meetings will be held between 11 and 2 o'clock. Three such meetings will take place.

VII. The general meetings shall be devoted to (*a*) transactions connected with the work and general management of the Congress; (*b*) speeches and communications of general interest.

VIII. Addresses in the general sittings, as well as in any extraordinary meetings which may be determined upon, can only be given by those who have been specially requested by the Committee of Organization.

Proposals relative to the future management of the Congress must be announced to the Committee of Organization before July 1, 1890. The Committee shall decide whether these proposals are suitable to be introduced for discussion.

IX. In the sittings of the sections, questions and problems will be discussed, which have been agreed upon by the special committees of organization. The communications of those appointed by the committee to report on a subject shall form the basis of discussion. As far as time allows, other communications or proposals proceeding from members, and sanctioned by the Committee of Organization, may also be introduced for discussion. The bureau of each section decides as to the acceptance of such offered communications, and as to the order in which they shall come before the meeting, always provided that this point has not been already determined in the sitting itself by a decree of the section.

Scientific questions shall not be put to the vote.

X. Introductory addresses in the sections must, as a rule, not exceed twenty minutes in length. In the discussions no more than ten minutes are allowed to each speaker.

XI. All addresses and papers in the general and sectional meetings must be handed over to the secretaries, in writing, before the end of the sitting. The Editorial Committee shall decide whether, and to what extent, these contributions shall be included in the printed *Transactions* of the Congress. The members who have taken part in the discussions will be requested to hand over to the secretaries, before the end of the day, in writing, the substance of their remarks.

XII. The official languages of all the sittings shall be German, English, and French.

XIII. The acting president shall conduct the business of each meeting according to parliamentary rules.

XIV. Medical students, and other persons, ladies and gentlemen, who are not physicians, but who take a special interest in the work of a particular sitting, may be invited by the president or be allowed to attend the sitting by special permission.

XV. Communications or inquiries regarding the business of separate sections, must be addressed to the managing members thereof. All other communications and inquiries must be directed to the General Secretary, Dr. Lassar, Berlin N.W., 19 Karlstrasse.

[1] Treasurer's address: Dr. M. Bartels, Berlin S.W., Leipsigerstrasse 75. Please enclose a visiting-card.

Hydrophobia from the Bite of a Cat.—Principal Clark, of the Albion Academy, at Milton, Wisconsin, is reported to have died from hydrophobia, resulting from the bite of a cat ten months previously. The immediate effects of the bite appeared to be trivial, but the hydrophobic symptoms, when they declared themselves recently, were unmistakable and death most painful.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 28 TO FEBRUARY 3, 1890.

By direction of the Secretary of War, the extension of leave of absence granted C. N. BERKELEY MACAULEY, *Captain and Assistant Surgeon*, in S. O. 294, A. G. O., December 18, 1889, is further extended one month.—Par. 1, *S. O. 22, A. G. O.*, January 27, 1890.

MIDDLETON, JOHNSON V. D., *Major and Surgeon*.—Is granted leave of absence for fifteen days.—Par. 9, *S. O. 21, Headquarters of the Army, A. G. O.*, January 25, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING FEBRUARY 1, 1890.

RUSH, C. W., *Passed Assistant Surgeon*.—Detached from the Naval Academy, and placed on waiting orders.

DECKER, C. J., *Assistant Surgeon*.—Ordered to the Naval Academy, February 1st.

GREEN, E. H., *Passed Assistant Surgeon*.—Detached from the "Alert," and placed on waiting orders.

BEARDSLEY, G. S., *Medical Inspector*.—Granted extension of leave to April 30th, with permission to remain abroad.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL LECTURES.

ANEURISM OF THE AORTA.

A Clinical Lecture.

BY RICHARD LEA MACDONNELL, B.A., M.D.,

PROFESSOR OF CLINICAL MEDICINE IN THE MCGILL UNIVERSITY; PHYSICIAN TO THE MONTREAL GENERAL HOSPITAL.

GENTLEMEN: Within the last month we have had opportunities for studying the clinical features presented in two cases, both of which are believed to be suffering from thoracic aneurism. One, you will remember, is our own patient, the other man came from the service of Dr. Molson, who very kindly sent him to us for purposes of examination.

This man, whom you have seen almost daily for the last month, came to us from the throat department of the hospital, a department which frequently introduces to us our aneurism patients. The man is forty-four years old, a railway laborer, and it is very probable that he has had syphilis. At least, we cannot exclude syphilis from our consideration. He confesses to having had gonorrhœa and a soft chancre four years ago. As we cannot depend upon his differential diagnosis of chancre from chancroid, we cannot, therefore, assert that there is no history of syphilis.

The three points thus far given represent the three important factors in the production of aortic aneurism: 1, age; 2, occupation; 3, history of syphilis.

The age at which aneurism of the aorta usually appears is not that of youth, nor yet that of old age, but an intermediate stage; the time when a man is beginning to get structurally old, at the same time that, in a muscular sense, he is still young. The strain which the vessels can bear when they are young and elastic will cause them to stretch and break when they are old and less resilient. A potent agent in producing arterial degeneration is syphilis. Normal senile changes *plus* syphilis render an artery fragile long before its time. The patient is more conscious that he is becoming old, or that hard muscular work is not suited to him. The strain goes on, the weak artery offers less and less resistance to the blood-current, a stretching occurs which increases with greater or less rapidity until symptoms of pressure on neighboring organs begin to be apparent. The case is diagnosed, and the treatment, based on the knowledge of the causation, is instituted; symptoms are usually relieved, and the progressive enlargement of the aneurism is often arrested.

Aneurisms are caused either by local weakness of the arterial wall, or by repeated sudden increase in the blood-tension. Localized weakness in the arterial wall is caused by chronic endarteritis, but degeneration of any of the three coats produces a weakened condition of the wall which allows of its being forced outward by the heightened pressure within. The middle coat is the one most commonly involved, and it is thought that in all cases this coat has given way. Syphilis produces an arteritis of the middle coat, hence the frequency with which a history of syphilis is met with in our aneurism cases. Increase in blood-pressure, which is sudden and repeated, is more dangerous than that which is steadily acting, for we do not often find aneurism in cases of a chronic nephritis where we know that there is increased blood-pressure. There are instances, too, where an aneurism is supposed to date from one particular strain, as, for example, in one of my cases where the patient attributed the disease to his effort in lifting a large lump of ice; and we know, too, that many patients say that their aneurism resulted from an injury. Thus a man who was in the hospital two years ago said that his aneurism was the result of the kick of a horse. I do not think the kick itself produced the aneurism, but it is probable that the effort made by the patient to avoid the injury caused a sudden increase of blood-tension which resulted in the initial bulging of the aorta.

The disease usually occurs amongst those who follow a laborious life, but this is not always the case. One of my patients had been a barber all his life, another a commercial man. I am inclined to think that the excessive use of the arms strongly predisposes. One of our hospital patients had been an instructor in sword exercise in the cavalry, and had worked a great deal as a chopper. That the disease is very common amongst soldiers is beyond doubt, but then it must be remembered that in soldiers a history of syphilis and alcoholism is very commonly met with. I doubt if it will be found amongst the soldiers who are serving on the present short service plan. The old-fashioned soldier was very fond of drink, seldom escaped venereal disease, and was kept in the ranks for a very long period, getting his discharge at a time of life when he was too old for the manual labor which remained as his only means of getting a living. Tight-fitting dress and accoutrements are also thought to have aided in the production of aneurism.

The favorite site of an aneurism is either in the ascending part of the arch of the aorta, or, more commonly, the junction of the ascending and the transverse portions of the arch.

Usually the walls of an aneurism are composed of the outer and inner coats of the vessel; the middle coat can be found, usually much thinned, just at the neck of the sac where it is continuous with the middle coat of the sound part of the artery. The fibrin deposited from the blood is generally found in layers on the inside of the aneurism deposited one upon another like the layers of an onion.

Our patient began eight months ago somewhat suddenly to suffer from difficulty in breathing after exertion, and whenever he attempted to undertake any heavy work the sensation of choking became so urgent that he

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was obliged to desist. A cough came on at the same time, and he says that he brought up a great deal of phlegm. A thoracic aneurism produces by its pressure an irritative tracheitis, which often gives rise to a great deal of expectoration.

These symptoms were present for two months before any pain in the chest was experienced. There was pain continually present in the upper part of the chest, but it did not shoot into his arms at any time. This pain is not now so severe as it was, and it is noticeable in cases of aneurism that the pain is usually more severe at the outset of the disease. This can be accounted for by the fact that the pain is caused by pressure upon neighboring structures, which, at first, resent the presence of the encroaching swelling. After a time the parts accommodate themselves to the altered relationship of the thoracic contents. I well remember the case of a clerk, who, by the way, had been a soldier, and had had syphilis, in whom the pain resulting from a supposed innominate aneurism had been most intense, almost anginal. Here sudden relief was obtained by the forward dislocation of the right clavicle.

To return to our patient, he also complained that in swallowing he felt a sharp, smarting pain beneath the sternum, which was very much more severe whenever cold fluids were taken.

There has never been any hæmoptysis. Latterly, the voice has been hoarse and the cough very troublesome. He applied for relief at the throat department, where Dr. Major discovered paralysis of the left vocal cord, diagnosed aneurism, and sent him to the wards for treatment.

To recapitulate: Here is a man of forty-four, a laborer, with a history of syphilis, who is suffering from a chronic affection, of which the symptoms distinctly complained of are: dyspnœa on exertion, distressing cough, a suffocating sensation in his chest, severe continuous pain in the upper part of the chest, and dysphagia, symptoms pointing unmistakably in the direction of thoracic aneurism.

Before we had time to look into the history which the clinical clerk had carefully prepared, before we had time to examine his chest, he himself made a diagnosis. You will remember that, at a previous clinic, I immediately called the attention of the student, whom I had requested to examine the case, to the cough, and asked him if he noticed any striking peculiarity in it. That cough was distinctly the cough of aneurism, a loud ringing, more than ringing, a clanging cough, which was frequent, and came in paroxysms. It occurred several times in a few minutes, and was most distressing. I have known an aneurism to be diagnosed merely by that peculiar clanging cough heard through the thin partition separating the cabins in an ocean steamer.

Now for the appearance of the patient. He was by no means emaciated, and, but for the distressing attacks of coughing, one would suppose that he was in the most robust health. He told me, a few days ago, that he had failed to obtain any sympathy on account of his healthy appearance. Examining him closely you see that he is older than his years. His hair is very gray, and he might easily pass for a man not far from sixty. Now what evidences of aneurism can we make out before we give our attention to the physical examination of the chest?

First. *Aphonia.* He answers questions in a hoarse whisper, and attempts at speech bring on severe attacks of coughing.

Second. *Pain.* He says that he suffers from pain, both across and through the chest, sometimes dull, sometimes stabbing. This latter sensation is referred to a spot between the shoulders.

Third. *Dysphagia*, which has been constantly present for the last four months.

Fourth. The left pupil is smaller than the right.

Now, when he is stripped, we examine the chest very closely, and perceive no undue prominence upon any part of the chest-wall, and that the heart's apex is beating in its usual position. Palpation carries us several steps further in our diagnosis. We palpate behind the episternal notch, but there is no tumor to be felt there. We feel the trachea and find that at every beat of the heart the larynx is pulled down toward the sternum. More than that, if the forefinger be placed on the *pomum Adami* so as to exert gentle continuous pressure upward, the cardiac pulsations can be distinctly counted, and the number corresponds with that counted at the radial artery.

Percussion enables us to say that the extent of cardiac dulness is not enlarged. There is dulness over an area, bounded above by the clavicle, internally by the median line, externally by a line dropped from a point on the clavicle two inches to the left of the sterno-clavicular articulation, and below by the lower margin of the second rib. There is no dulness posteriorly.

The stethoscope fails to detect any abnormal heart-sound, but when it is placed over the dull area a marked systolic bruit is heard, and this bruit is intensified when the patient sits up. It is not audible in any other part of the chest. There is harshness of breathing all over both sides of the chest, but this is more marked on the left side. The pulse is 63 per minute, but on the left side it is almost imperceptible at the wrist.

Let us sum up now the symptoms and physical signs which our examination has afforded us: 1. Cough or dyspnœa on exertion, with suffocative sensations in the chest. 2. Pain in the chest. 3. Dysphagia. 4. Discomfort on lying on the right side. 5. Contracted pupil on the side on which the tumor is supposed to exist. 6. Trachael tugging. 7. Dulness on percussion over the part of the chest thought to be prominent. 8. Systolic bruit.

Can we locate the tumor? Remember what I have so often told you in the dissecting-room, that the transverse portion of the arch runs almost directly from before backward, and that the structures which are said to lie in front really lie at the left side of the arch. In this patient there is dulness at the left of the manubrium sterni; the aneurism is bulging in that direction. Possibly it presses upon the left phrenic nerve, but it lies between it and the soft lung, so that probably its function is not interfered with. Then the trunk of the left vagus may for the same reason escape, but its recurrent branch must appreciate even a slight change in the calibre of the arch, for it winds around it and takes its upward course between the arch and the trachea, two hard bodies which are very likely to squeeze it, as they undoubtedly do in this case. The respiratory sounds in the left lung and the large amount of expectoration with occasional bloody streaks, lead me to suppose that the left

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apex is compressed. The parts at the right side (or posterior side) of the arch all give evidence that they are subject to pressure. Apart from hoarseness and cough there is evidence of pressure on the fork of the trachea or upon the bronchus by the presence of tracheal tugging, which is better marked in this case than in any I have seen. When this sign is present it means distinctly that the tumor is attached to the trachea or bronchus, and inasmuch as there is pulsation in it, it also means that consolidation has not been effected.

If you direct your attention to the relations of the æsophagus you will see how pressure upon that collapsible tube is not readily brought to bear. It is between the trachea and the vertebral column, and would be likely to be pushed against the pleura of the opposite side of the chest if the aorta were to enlarge in that direction. Dysphagia is often absent in cases where a tumor even of considerable size occupies the chest.

The patient complained that he felt choked whenever he attempted to lie upon the right side. The reason for that is plain. The tumor lies to the left side of the trachea, and when he lies upon his right side the weight of the tumor comes upon his trachea and increases the pressure on the recurrent laryngeal nerve. The thoracic duct, which lies on the left front of the vertebral column, is a small tube, and likely to slip out of the way should the aorta enlarge so as to squeeze it against the spinal column. Lastly, you must bear in mind that the upper part of the thorax is very narrow from before backward. There are not two inches between the top of the sternum and the spine. A tumor as large as a hen's egg would exert pressure both on the sternum and on the vertebræ and adjacent ribs.

ORIGINAL ARTICLES.

TREATMENT OF TUBERCULOSIS.

BY J. LEWIS SMITH, M.D.,
OF NEW YORK.

(Concluded from p. 651, Vol. lv.)

Curative Treatment.—It has long been the belief in the profession, as well as among the laity, that tuberculosis is in the end, with few exceptions, fatal, whatever remedial measures are employed; and that, therefore, remedies may ameliorate symptoms, but do not change the result. But since attention has been directed to this subject, a sufficient number of observations have been made to show that tuberculosis, at an early stage, can in a large proportion of cases be cured or rendered latent. The late Professor Austin Flint, in his treatise on *Phthisis*, published in 1875, stated that of 670 phthisical cases which came under his observation, he ascertained by auscultation and percussion that the disease had been cured in 44, and was non-progressive in 31 others. But the most convincing proof of the curability of tuberculosis is furnished by the post-mortem examination of those who have died of other diseases. A cretaceous or fibroid state of the apex of the lung, without tubercles elsewhere, may be regarded as certain evidence of arrested tuberculosis. Now, two of the curators of large New York hospitals inform me that they frequently find cretaceous or fibroid degeneration at the apex of the lung without tubercles elsewhere, in the autopsies in these institutions. One of these gentlemen, whose examinations are in the dead-house of Bellevue Hospital, states that this evidence of arrested tuberculosis is present in at least one-fourth of the cadavers which he examines, and the Bellevue Hospital patients come from the most crowded and insalubrious tenement houses of the city and have led a life of poverty and privation, and frequently of dissipation. The London *Lancet*, September 22, 1888, states that M. Vibert has examined the records of the necropsies in the Paris morgue, and that in 131 subjects whose death had been sudden from violence or acute diseases, the lesions of pulmonary tuberculosis were present in 25, and in 17 of these the tubercles had undergone the cretaceous or fibroid change, and were practically cured. It is certain, therefore, that tuberculosis of the adult in its commencement, and when affecting only a small portion of the lung, is often cured or rendered permanently latent.

Professor Prudden, of the Laboratory of the College of Physicians and Surgeons, informs me that ordinary serum circulating in the bloodvessels possesses marked germicidal properties, and therefore measures which benefit the general health and improve the quality of this important constituent of the blood, have a curative effect as regards tuberculosis. The tubercle bacillus is an irritant to the tissues, and in cases which are cured or rendered latent it becomes surrounded by dense tissue, which in time undergoes the cretaceous or fibroid degeneration. The bacilli in the interior of the mass may retain their vitality for an indefinite time, but being encapsulated they do no harm. There can be no doubt that many adults have local tuberculosis, and are cured by improvement in their general health and in the quality of their blood, without suspecting that they have had this disease. In young children, especially in infants, tubercles are frequently disseminated in the organs, and recovery under such circumstances must be impossible or rare; but local tuberculosis or tuberculosis limited to certain glands, as the bronchial, is not unusual in childhood, and this form of the tubercular disease may be cured by measures which improve the general health.

The indications of treatment of tuberculosis are twofold: first, to invigorate the system in every possible way, so that the organs and tissues are in a better condition to resist the bacillus and the serum to antagonize and destroy it; and, secondly, the employment of medicinal agents, if such can be found, which are destructive to the bacillus and safe to the patient.

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Measures designed to improve the general health must be chiefly hygienic, and are described in all the text-books. The diet should consist of milk, the meat preparations, and farinaceous substances, prepared in such a way that they afford the maximum amount of nutriment and are easily digested. If the digestion be poor, peptonized food may be advantageously employed, and pepsin may be taken with the food. In 1881–82 Debove recommended gavage or forced feeding of consumptives through a flexible rubber tube, having a funnel attachment, the tube being introduced into the stomach. He employed meat preparations, with pepsin. In THE MEDICAL NEWS, October 1, 1887, Dr. S. Solis-Cohen, of Philadelphia, also recommended gavage in the treatment of phthisis. A quart of milk, two tablespoonfuls of beef powder, three eggs, fifteen grains of scale pepsin, and thirty drops of dilute muriatic acid were warmed and administered twice daily through a stomach tube, a patient eating what he wished in the interval. Gavage has been employed by certain European physicians in the treatment of children suffering from various forms of innutrition, and it seems probable that tubercular patients may be benefited by it in some instances. In the ordinary mode of feeding, the predigested foods can often be used with benefit by consumptives, inasmuch as they have, for the most part, feeble digestion.

As regards the hygienic measures designed to arrest tuberculosis, the most important, next to the use of proper food and the employment of such aids to nutrition as cod-liver oil and the alcoholic preparations, is outdoor life, and, if possible, in localities having a high altitude. The late Professor Flint, in examining the records of 62 cases of arrested phthisis which came under his observation, ascertained that the principal agent in effecting this result was exercise in the open air. He therefore strongly recommended this mode of life to consumptives, and also constant ventilation of their sleeping apartments, even in the winter season, the danger of taking cold being averted by maintaining sufficient warmth of air by a fire. Dr. James Blake has also reported instances of recovery of phthisical patients who lived, during the five or six months of the dry season, in the open air upon the coast range of mountains in California at an altitude of 3000 to 5000 feet. These patients were in the open air night and day, without even the protection of tents.

Residence at a High Altitude.—The London *Lancet*, May 26, 1888, contains the abstract of a paper read before the Medico-Chirurgical Society of London by Dr. Williams, recommending residence at a high altitude as an efficient means of checking the progress of tuberculosis. He states that of 141 patients who had employed the high altitude treatment, 14.13 per cent. were completely cured, 29.78 per cent. were much benefited, 11.34 per cent. were more or less benefited, and 17.02 per cent., including 13.47 per cent. who died, continued to grow worse. Drs. Quain and Pollock, in discussing this paper, expressed the opinion that consumptives who improve at high altitudes, improve equally with the same treatment at lower elevations; in other words, that residence at a high altitude does not influence the result. Brehmer, on the other hand, believes that the inhabitants have immunity from tuberculosis at an altitude of 1500 feet in Germany, of 4500 to 5000 feet in Switzerland, and 10,000 to 15,000 feet at the equator (*Die Therapie Chronische Lungenbeschwerden*, Wiesb., 1887). The most apparent and notable peculiarity in the air at high elevations, apart from its purity, is its rarefaction. At an altitude of 9000 feet above the level of the sea, it is said from observations made, that the air is so rarefied that three times the usual exercise of the lungs is required to meet the demands of the system. Dr. Mays states in a paper published in THE MEDICAL NEWS, November 27, 1886, that the Quichua Indians, on the lofty plateaus of Peru, constantly breathing a rarefied air, "acquire enormous dimensions" of the chest, due to an increase in the size and perhaps number of the air cells. More numerous and more exact observations are required in order to determine whether, or to what extent, residence at a high altitude is beneficial to consumptives, and if it exerts a controling effect on the disease, whether this result is due to the increased pulmonary expansion and activity or to other causes. Certainly, from observations already made, we are justified in recommending outdoor life in a mild and equable climate, and also residence at high elevations if the cold is not too severe.

Residence in the Evergreen Forests, and the Use of Turpentine.—In an interesting paper read before one of the societies, and subsequently published, Dr. A. L. Loomis states his belief that the terebinthinate vapors in the evergreen forests possess healing properties for consumptives. He quotes the statement of Ringer that turpentine employed as a medicine enters the blood, and may be detected in the breath, the perspiration, and in an altered form in the urine of the patient. The presence of the vapor of turpentine in the pine forests, Dr. Loomis remarks, cannot be doubted, and its "local and constitutional effects," he adds, "are those of a powerful germicide as well as stimulant" Dr. Loomis quotes the opinion of Mr. Kingsett that turpentine, during its oxidation, evolves the peroxide of hydrogen, and therefore by the "oxidation of the terebinthinates, there is produced in extensive pine forests an almost illimitable amount of peroxide of hydrogen, which

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renders the atmospheres of such forests antiseptic." He believes that the peroxide of hydrogen so abundantly produced in pine forests "successfully arrests putrefactive processes and septic poisoning," and therefore he recommends residence in the pine forests as one of the most efficient means of relieving the symptoms of tuberculosis and retarding the progress of this fatal malady. At high altitudes, the coniferous or evergreen trees usually predominate, and if the views of Professor Loomis be substantiated by future investigations, it may be that the benefit believed to be obtained by consumptives at high elevations is partly due to the exhalations from these trees.

The bacteriologists who have cultivated the tubercle bacillus, and observed the action upon it of the various agents which have been employed and extolled by clinical observers, state that most of these agents do not penetrate the tubercular mass; that while they may destroy the superficial bacilli, they do not affect those more deeply seated, and therefore fail to arrest the disease. But turpentine and its derivatives appear to penetrate the tissues as deeply as almost any other agent, and therefore if they are sufficiently antiseptic and not too irritating, we may expect good results from their judicious use. But it is probable that they are less efficient as germicides than some of the other agents which can be safely employed, and therefore should be recommended only as adjuvants, or as remedies which may give some relief to the catarrhal and other symptoms without exerting any marked antiseptic action. Hohnfeld states that he applied oil of turpentine to fresh colonies of the micrococcus prodigiosus and staphylococcus aureus, and that it exerted little destructive or retarding effect on these microörganisms.[1] These experiments would lead us to distrust the germicide action of turpentine and the terebinthinate preparations in tuberculosis, for the tubercle bacillus is tenacious of life beyond most other microbes. But the alleged good results of teaspoonful doses of the oil of turpentine in that other fatal microbic disease, diphtheria, certainly justify the experimental use of this agent in tuberculosis.

Terebene, produced by the action of gaseous hydrochloric acid on turpentine, has been prescribed in tuberculosis and chronic bronchial catarrhs, with some apparent benefit. An adult should take ten increased to twenty drops three times daily. A child can take a dose proportionate to the age. The following formula has been recommended:

℞.—Terebene	ʒiv.
Pulv. acaciæ	ʒiij.
Aquæ	℥ij.
Syr. zingiberis	℥j.—M.

Dose, one teaspoonful.

[1] Fortschritte der Medicin, October 1, 1887.

Terebene can also be employed by inhalation from Robinson's inhaler, or, properly diluted, from the hand or steam atomizer. It has been administered in ten drop doses to some of the consumptives in my wards in the Charity Hospital, and the resident physician who had charge of these cases writes to me as follows

"I am satisfied that in nearly all cases of dyspnœa it is of value. In some it affords marked relief, and I have had patients tell me that it gave the most relief of anything. Others say that it afforded some relief. It makes expectoration in some patients markedly more easy, and the sputum much thinner; in others the effect is only slight or moderate."

It probably aids in relieving the catarrh which accompanies tuberculosis.

Hot Air Inhalations.—Halter states that workers in a limekiln, breathing dry air at a temperature of 122° to 156° F., were exempt from phthisis during a period of fifteen years, in a locality where this disease was common. He also states that the most favorable temperature for the growth of the bacilli is 98.6° to 104° F., and that a temperature of 105.8° destroys them. Moreover, his experiments have shown him that the inhalation of dry air at a temperature of 248° to 256° raises the temperature of the expired air to about 109.7°, a degree of heat which, he says, is fatal to the bacillus.[1] Dr. E. Krull states that for more than two years he has treated consumptives with the inhalation of hot air heated to 132° F., and that this raised the temperature of the expired air to not less than 107.6°, and incipient cases seemed to derive benefit from this treatment. Dr. Weigert, of Berlin, has constructed an apparatus for the inhalation of hot air, which was employed for a time in the wards of Charity Hospital, but it did not seem to give as much relief as the antiseptic inhalations which have been used by the same patients.

Dr. Trudeau, of Saranac Lake, prescribed the hot air treatment in four cases, four hours each day, the temperature of the inhaled air being 392° F. The first and second patients improved slightly at first, but refused the treatment, the one after one month, and the other after six weeks. The third patient was treated three months without the least appreciable effect. The fourth patient was treated four months, with manifest improvement in her physical signs and general health, but no more improvement than frequently occurs from any new mode of treatment. In all the cases the sputum was examined before, during, and after the treatment, and in every examination the tubercle bacillus was present. The result claimed for the hot air treatment had not been obtained—that is, the destruction of the bacilli; and if they are not destroyed in the sputum, certainly they are not in the tissue of the lung. Therefore

[1] Berliner klinische Wochenschrift, September 3, 1888.

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there can be little doubt that the hot air inhalations, so far from coming into general use, will be discarded, not only because they are unpleasant to the patient but are inefficient. There is always a large amount of residual air in the alveoli, and there can be little doubt that in the hot air inhalations the air in the alveoli and terminal bronchial tubes never attains the elevation of temperature of the air that is inhaled, nor of that which is exhaled. Moreover, as we have seen, the tubercle bacillus resists the destructive action of high temperature. It is said to retain its vitality in liquids which have been twice heated to the boiling point.

Creasote.—Of the many medicines which have been recently employed in the treatment of tuberculosis, creasote appears to have given more general satisfaction than any other. I am informed that the late Dr. Cammann, the inventor of the binaural stethoscope, employed it twenty years ago in the treatment of tuberculosis, but it was seldom prescribed for this disease until within the last decade. In the *Berliner klinische Wochenschrift*, July 20, 1886, von Brunn states that he has treated 1700 phthisical patients in the last eight years with creasote, giving to adults not less than six to eight drops in twenty-four hours. He employed it in solution with tincture of gentian and wine, and believes that he obtained good results, especially in acute unilateral cases. Professor Sommerbrodt states[1] that he employed creasote in about 5000 phthisical cases during the preceding nine years. At first he used Bouchard's solution of creasote, and afterward gelatine capsules, each containing three-fourths of a grain of creasote and three minims of the balsam of Tolu. The amount of creasote administered daily to the patients who were adults was increased gradually from one capsule to not less than nine. As many as 600 to 2000 capsules were given to each patient without a break. In many cases the improvement was marked, not only in the symptoms and in the general health but also in the physical signs. He believes that he has cured cases by insisting on a continuance of the treatment. To show the good effects of creasote, he cites the case of a student of sixteen years, with tuberculosis of the right lung, who took three capsules three times daily, or about seven and and a half grains per diem. His cough abated, his weight increased six pounds in two months, his expectoration had ceased. Instead of the dull percussion sound over the apex of the right lung, only a slight rhonchus was observed and his general health had greatly improved.

Many others who have employed creasote during the last two or three years, both in this country and in Europe, report favorable results. Strümpell says that it produces no ill effects, and in large doses it frequently causes improvement in such symptoms as the cough, expectoration, and appetite, but he doubts whether it exerts any marked curative effect upon the disease. It has been employed during the last year in Charity Hospital, and the resident physician who had charge of the ward in which it was used writes to me that it "Seems to possess some staying influence over the progress of the disease." In the New York Foundling Asylum creasote in cod-liver oil has been administered during the last year to the few phthisical patients under treatment in doses of one drop three or four times daily to children of three or four years, and Dr. Lynde, the resident physician, thinks that it has been the most useful of the remedies employed.

During the past year, I have prescribed creasote for internal use in the following formula:

℞.—Creasoti (Morson's)
Spiriti chloroformi
Alcoholis } . . āā ℥ss.—M.

Dose for an adult, nine drops three times daily in half a teacupful of water containing a tablespoonful of brandy or two tablespoonfuls of wine. The nine drops of the mixture, containing three of the creasote, have been increased to twelve drops, or four of creasote, and, thus far in my practice, patients believe that they have been benefited by this remedy, and have desired to continue it. At the same time, in some instances, I have recommended the inhalation of ten or fifteen drops of the same mixture from Robinson's inhaler. This dose of creasote, three or four drops, may seem large, but it is tolerated when sufficiently diluted, though it may be best to commence with a smaller quantity. Children should, of course, take doses proportionate to the age, the fractional part of a drop being sufficient for infants. Creasote has also been injected into the tubercular lung through the chest-walls by several physicians, a syringe provided with a long and delicate needle being used. Rosenbusch injected eight drops of a three per cent. solution of creasote in almond oil in two places at the seat of the disease, or sixteen drops in all. The result was a marked diminution of the cough, the sweats, the amount of sputum, and, in recent cases, an increase in weight. The beech creasote was used, and the skin and apparatus were first sterilized by an antiseptic lotion. When the instrument was not introduced deeply enough, a sharp, pleuritic pain sometimes occurred, but it soon abated. Creasote appears to be the most valuable of the recent remedies recommended for tuberculosis, but in order to determine its exact value, the proper mode of employing it, and the size and frequency of the dose, more extended observations are required. Fräntzel says that experiments have shown that this substance is inimical to the growth of the bacillus when min-

[1] Medical Chronicle, July, 1887.

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gled in minute quantity with a gelatin culture-medium, and on this fact is based its internal administration. When it is injected into the lungs through the chest-walls, Dr. E. G. Janeway, of New York, believes that it is very important that the almond oil or other vehicle employed should be first sterilized.

Iodoform.—This agent, dissolved in ether and inhaled, has been recommended. It apparently gives some relief to the cough, and possibly to other symptoms, but the belief that it is destructive to the bacillus has been shown to be fallacious by the experiments of Roosing, who inoculated the eye of a rabbit with tubercular matter mixed with iodoform, and the iodoform did not prevent or retard, but apparently accelerated the development of tubercle at the point of inoculation by its irritating effect upon the eye.[1] Iodoform cannot, therefore, be recommended as a curative agent in tuberculosis.

Biniodide of Mercury, Corrosive Sublimate.—Miguel and Rueff employed a solution of biniodide of mercury, 1 part to 40,000, as a germicide spray in tuberculosis. They state that of twenty-seven patients treated by this spray, nineteen improved, and the remaining eight were neither made better nor worse. It is unfortunate that the results of treatment by the biniodide, as observed by these physicians, were not stated more in detail. If they relied entirely on the opinions of the patients, they may have been deceived, for patients with chronic diseases often believe for a time that they are benefited by new modes of treatment, when there is no actual improvement.

The fact that corrosive sublimate employed internally and locally in the treatment of diphtheria has the confidence of the profession as an efficient germicide, suggests its use in the treatment of other microbic maladies. Moreover, its use in diphtheria has shown us what doses of this powerful agent can be safely prescribed. I am not aware that corrosive sublimate has been employed internally in the treatment of tubercular patients, but it has been used as a spray. In the Charity Hospital, several of the patients inhaled from the atomizer one teaspoonful of an aqueous solution of corrosive sublimate, two grains to the pint, every three to six hours, and both the patients and house-physicians believe that it acts beneficially in relieving symptoms, especially the cough. It cannot be doubted that the spray employed as often as every third hour disinfects the sputum to a great extent, and destroys the bacilli upon the surface of the larynx, bronchial tubes, and in the alveoli, but whether benefit may accrue to consumptives from its internal use we have not sufficient data for determining.

Another medicine which has been considerably employed in Europe, and in regard to which opposite opinions are expressed, is hydrofluoric acid. MM. Seiler and Garcin, of Paris, detailed the results of their use of this agent in a paper published in 1887 in the *Bulletin de l'Académie de Médecine.* They state that of 100 tubercular patients treated by hydrofluoric acid, 35 were cured, 41 exhibited more or less improvement in symptoms, 14 were not benefited, and 10 died. They state that in the favorable cases rapid improvement was observed in the symptoms, such as the fever, night-sweats, dyspnœa, and expectoration. Giacomi, of Berne, employed a mixture of 100 grammes of hydrofluoric acid with 300 grammes of water in a vessel over a spirit-lamp. Eight patients inhaled the vapor one hour each day. In one, marked relief occurred; in another some temporary improvement took place as regards the appetite and dyspnœa, but in the remaining six the result was negative. No discomfort resulted from the inhalation, though from the well-known action of hydrofluoric acid the window panes became more or less opaque. Gager has treated seventeen cases with the vapor of hydrofluoric acid with the following result: In five the bacilli disappeared from the sputum and the auscultatory signs improved in a marked degree; in seven some improvement in the physical signs occurred; in twelve the weight increased; in five cases no result.[1] Grancher and Chautard experimented with hydrofluoric acid on rabbits, and they express the opinion that the vapor of this agent does not penetrate sufficiently to destroy bacilli in the depth of the tissues. Trudeau states that the vapor of hydrofluoric acid is efficient as an antiseptic, and seems to possess greater penetrability than the ordinary antiseptic sprays, but it can only destroy those bacilli with which the inhaled vapor comes in contact; therefore, the bacilli imbedded in tubercular nodules and the tissues escape.[2] Professor Jaccoud inoculated guinea-pigs with tubercular sputum which had been subjected to the action of hydrofluoric acid, and produced tuberculosis with this sputum as certainly as with sputum not thus treated. From these experiments, and others performed under his direction, Jaccoud believes that the vapor of hydrofluoric acid, employed in any safe manner, does not destroy the tubercle bacillus or notably diminish its virulence.[3] Therefore, the good effects from the use of this medicine, claimed for it by those who first employed it, have not been realized in the practice of more recent observers, so that we cannot recommend its employment in the place of remedies which have produced more favorable results.

Rectal Injections of Sulphuretted Hydrogen.—This treatment was first employed by Dr. Bergeon, of

[1] London Lancet, January 21, 1888.

[1] Deutsche medicinische Wochenschrift, 1888, p. 597.

[2] THE MEDICAL NEWS, May 5, 1888.

[3] London Lancet, November 10, 1888.

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Lyons, and being highly recommended by him, has been prescribed by many physicians in Europe and America. Its real value has now been apparently fully ascertained. The history of its use is instructive, since it shows how a mode of treatment which is inert may gain the confidence of intelligent physicians. The *British Medical Journal*, May 21, 1887, states that Dr. S. Cayhill, of the Isle of Wight, has employed Bergeon's treatment in private and hospital practice with the most encouraging results. He believes it is the greatest advance ever made in the therapeutics of pulmonary diseases. Dr. Henry Bennet also notices favorably Bergeon's treatment in the same journal for December, 1886. The late Dr. Bruen, of the University of Pennsylvania, treated 25 cases by Bergeon's method, employing twice daily from three quarts to a gallon of the gas slowly introduced. In nearly all the cases the night-sweats ceased, the cough, expectoration, and frequency of the pulse diminished, and the temperature fell half a degree to one degree.

On the other hand, Drs. Shattuck and Jackson, of Boston, employed Bergeon's treatment in 7 cases. No odor of the gas could be detected in the breath of these patients after its use, and paper moistened with a solution of the acetate of lead was not blackened when held before the mouth. The only result which might be attributed to the enemata was some diminution in the expectoration. Professor Austin Flint has made experiments in order to determine whether sulphuretted hydrogen introduced per rectum or by subcutaneous injection enters the lungs. He tested the expired air by holding before the mouth white filter paper moistened with a solution of acetate of lead. He ascertained that sulphuretted hydrogen was not exhaled at all, or was exhaled in small quantity, and for a period not exceeding three minutes. The presumption is, therefore, strong that sulphuretted hydrogen employed per rectum or subcutaneously, in some instances does not enter the lungs, and in other instances enters them in small quantity and is quickly expelled. Dr. Grauer placed cultures of the tubercle bacillus, as well as of other pathogenic germs in test-tubes, and subjected them to a current of sulphuretted hydrogen from two hours to a longer time, and yet their vitality was preserved, so that successful inoculations or cultures were produced. Dr. E. C. Trudeau, of Saranac Lake, says that in May, 1887, a tube containing a pure culture of the tubercle bacillus was subjected for thirty minutes to a stream of undiluted sulphuretted hydrogen made from sulphide of iron and sulphuric acid. The conducting tube was pushed through the cotton and held within half an inch of the coagulated serum, and the jet of gas allowed to play freely on the bacilli upon its surface. The entire mass soon became so blackened by the action of the sulphur as to resemble dark-gray paint. The microbes thus treated were then mixed with sterilized water and injected into the pleural cavities of two full-grown rabbits. These animals were then placed in a large box, well fed, and kept under a shed in the open air all summer. On October 19th, 162 days after the inoculation, both rabbits died within two hours of each other, and both were found to have cheesy bronchial glands and advanced pulmonary tuberculosis. The benefit, therefore, supposed by some to be derived from Bergeon's treatment, is probably due to hygienic measures.

Sulphurous Acid.—Dr. Dariex, in a monograph published in the *Bulletin Général de Thérapeutique*, February 29, 1888, states that Galen, in the second century, recommended the sulphurous air of volcanoes for consumptives. In recent times attention has been drawn to the beneficial effects of the inhalation of sulphurous vapors in tuberculosis by M. Salland, an army surgeon. A sergeant having this disease, which was progressing notwithstanding active medication, was placed in charge of the rooms in the barracks in which sulphur was burned for disinfecting purposes. This service obliged him to pass nine hours each day in a sulphurous atmosphere. At the end of sixty-five days he was cured. M. Auriol having observed the good effect of the inhalation of sulphurous acid upon certain consumptives, whose occupation compelled them to live in an atmosphere charged with this gas, fitted up a room for the treatment of this disease. The flowers of sulphur, slightly moistened with alcohol, was burnt in the corner of the room. Soon the patient began to have paroxysms of coughing, but he did not leave the room until moistened test-paper began to redden; if the respiration was much oppressed he left the room sooner or the window was opened. In order to render the vapor less irritating, and the paroxysms of coughing less severe, a little benzoin or powdered opium was added to the sulphur. These inhalations were practised morning and evening, the patient fasting, and afterward exercising in the open air. Appropriate medication, according to the symptoms, completed the treatment. Seventy patients, at different stages of tuberculosis, were subjected by M. Auriol to the inhalation of the sulphur vapor. Their sputa, previously examined, contained bacilli, and, inoculated in the guinea-pig, caused phthisis in a short time. Thirty of these patients, who were in incipient tuberculosis, obtained an arrest of the progress of the disease, disappearance of the fever and sweats, return of the appetite and increase in weight. The bacilli disappeared from the sputum. M. Auriol believes that these cases are cured, since the improvement has continued more than two years. The tubercles, he thinks, are transformed into fibrous tissue. Twenty others of the seventy tuber-

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cular cases did not have this treatment long enough to determine its value, or received it in an irregular manner. Nevertheless, they stated that they derived benefit from it. The remaining 20 had general tuberculosis and succumbed to the disease. M. Auriol employed sulphurous acid in the treatment of guinea-pigs that were rendered tuberculous by inoculation. They improved in flesh and weight, and in those that were killed a considerable time afterward, the tubercular nodules were found to be transformed wholly or chiefly into fibrous tissue.

M. Dujardin-Beaumetz has constructed a very ingenious and simple lamp for producing sulphurous acid by burning the bisulphide of carbon. This produces 111.3 volumes of carbonic acid and 141.4 volumes of sulphurous acid. The carbonic acid does not seem to produce any injurious effect, but, on the other hand, its anæsthetic action increases the tolerance and diminishes the irritation of the sulphurous acid. The *Bulletin Général de Thérapeutique*, February 29, 1888, contains a full description of Dujardin-Beaumetz's apparatus, which is too lengthy for insertion here.

I have described in the foregoing pages the most important of the remedies which have been recently recommended by apparently competent observers. There are others, which, from their nature and the limited trial which they have received, I have not thought of sufficient importance to require notice. Most of them will probably soon be discarded by those who now recommend them. The hygienic measures—as outdoor life, residence at a high altitude, free ventilation of sleeping apartment, and the use of the most nutritious and easily digested food—still maintain a most important place in the treatment of tuberculosis. Of the medicines, creasote used internally and by inhalation, the inhalation of sulphurous acid vapor, not carried to the extent of irritating the air-passages, and the use of germicide sprays, as of corrosive sublimate, the terebinthinate vapors, etc., appear to be the most deserving of recommendation. But no doubt the next ten years will witness important changes in the treatment of tuberculosis, based on its microbic nature, and probably remedies not now heard of will come into use.

A CASE OF ECTOPIC GESTATION WITHOUT CHARACTERISTIC SYMPTOMS.

BY J. M. BALDY, M.D.,
OF PHILADELPHIA.

THE following case is reported because it well illustrates some points in the much disputed question of the diagnosis of early ectopic gestation:

F. C., age twenty-four years; white; married for nine years. Has had two children and no miscarriage. The last pregnancy was six or seven years ago. After this labor she was in bed for eight weeks with a "sore and swollen belly," and since then she has never been free from pelvic and abdominal pain. Her menstruation has been regular but very profuse, lasting eight or nine days. In the interim between her first illness (following the birth of her child) and the present, she had an attack of abdominal pain, which confined her to bed for a week or more.

On November 15, 1889, she came to me stating that her regular menstruation had come on five weeks previously, and that she had been bleeding more or less ever since; the constant pain she had been having had become worse. She had the appearance of a very sick woman, her temperature was elevated, her pulse quick, and she was having chills and "creeps." An examination of the pelvis showed the uterus in fair position and of normal size. There were irregular cystic masses on each side, the largest being on the right. The necessary manipulation gave her much pain. A diagnosis of chronic double pyosalpinx, with an acute attack of pelvic peritonitis, was made, and an operation for the removal of the tubes was advised. She was admitted to the woman's ward of the Howard Hospital, and an operation made on November 21st. From the right side a tubal pregnancy was removed, which had advanced to about the sixth or seventh week; from the left side an ovarian cyst the size of a hen's egg.

The results of the operation were a complete surprise to me. My diagnosis of pyosalpinx—which was concurred in by my friend Dr. Bradford—was made with the utmost confidence, and we had not the slight estdoubt that it would prove to be such. An ectopic gestation never entered into consideration. As soon as the patient was well enough I questioned her closely to see wherein I was at fault in my conclusions. A most careful questioning of her disclosed the following facts:

At no time during the past year had she missed a menstrual period, nor had there been a scant or delayed one. At no time had she had any signs of pregnancy, such as she suffered from when she was previously impregnated. In fact, she does not even now believe that she was pregnant, basing this scepticism on the absence of a missed period and the early signs of pregnancy. Her breasts were of the normal size, the areolæ were not enlarged or changed in color, there was no tingling or itching about the breast, though they contained a small quantity of milk. However, she states that such had been their condition since the birth of her last child. There was no decidual discharge. The only thing she passed besides blood was a piece of whitish matter, such as she was in the habit of passing at the end of each menstrual period. This point has been most carefully inquired into, and she answers very intelligently. In addition to her statements, we have those of a careful trained nurse. The patient was in the hospital for two or three days before the operation, bleeding constantly. The nurse declares that the napkins were soiled with a discharge entirely free from clots or shreds. Stomach symptoms were entirely wanting. The

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pains were, according to her statement, not different from those she had with her previous attack of probable pelvic peritonitis.[1]

In the local examination there had not been noted any discoloration of the vagina, and the uterus was found to be of normal size. At the time of the operation, before I had discovered that I was dealing with an ectopic gestation, as I played my fingers around the uterus, I remarked that it was of natural size. The sensation conveyed to my finger, while palpating the lateral cystic masses through the vagina, was most remarkably like what I have felt in some pyosalpinx cases. In addition to all this, there were an elevated temperature, flashes of heat, and chilly sensations, all pointing to pus.

What symptoms, then, had we of extra-uterine pregnancy? Bleeding for five weeks, and pain, together with a period of six or seven years' sterility. All the other symptoms described as common to this disease were absent. The question arises, Could the correct diagnosis have been made on these data? I think not. The bleeding could easily be accounted for by the pelvic disease and the peritonitis which existed; and, as a matter of fact, she was in the habit of bleeding profusely at every period, and on a previous occasion, when she had a probable pelvic peritonitis, she bled irregularly for some weeks. The pain I believe to be the most valuable sign of ectopic gestation, it being, as a rule, of a character almost peculiar to itself. Here, however, I was not given the opportunity to see her in a typical spasm, and her own statement is that they differed from her old ones merely in degree, and in assuming, at times, a more cramp-like character. This, however, I only obtained from her after the operation, her statement before operation being that there was no difference. The combination of pain, sterility, and irregular, profuse bleeding is so common in pelvic inflammatory troubles that nothing unusual could be suspected from them alone. On the other hand, the previous history, the pelvic examination, especially the double nature of the affection, the elevated temperature, the chills, the evident chronic nature of the trouble with the acute attack of pelvic peritonitis supervening, all pointed almost conclusively to pyosalpinx. One more point might be added—she had lost flesh quite rapidly in the past five weeks.

To be doubly sure that the right tube contained an impregnated ovum, I took the specimen to Dr. George A. Piersol, of the University of Pennsylvania. After a microscopical examination which displayed the chorion villi most beautifully, he pronounced it an undoubted specimen of extra-uterine pregnancy.

[1] The patient was seen within the past ten days. The incision and tube tract are entirely closed. She has no pain, is quite fat, has a splendid appetite, and sleeps well. She occasionally spits a little blood.

Her recovery was complicated about the third day by a pneumonia (whether from the ether, from unavoidable exposure, from both or from neither, I am unable to say), and later by the drainage track becoming infected. Her convalescence was slow and incomplete. She left the hospital with the pulmonary trouble still hanging on. Later, she appeared at the out-patient department spitting bloody mucus. She was induced to enter the Pennsylvania Hospital, but became discontented and would not stay.

The points to which I would particularly call attention are:

First. That this was an unruptured or primary tubal pregnancy. (This is the second one of the kind I have had.)

Second. That there was no missed or scanty menstrual period.

Third. That there was no decidual discharge.

Fourth. That there were no breast or stomach symptoms, or other signs of pregnancy.

Fifth. That the woman did not think she was pregnant.

Sixth. That the uterus was of normal size.

Seventh. That the character of the pain was not markedly distinctive.

Eighth. That there was a tubal pregnancy on one side and an ovarian cyst on the other.

The case is one more illustration of the impossibility of an accurate diagnosis in ectopic gestation, and of how such a condition can exist without showing enough symptoms to cause even a suspicion of its existence.

328 SOUTH SEVENTEENTH STREET.

REMARKS UPON EMPYEMA.[1]

BY MARY PUTNAM JACOBI, M.D.,
OF NEW YORK.

(Concluded from page 122.)

THE use of a valve in the dressing of the empyemic fistula has received much less attention than it deserves. The elaborate valvular apparatus described by Phelps, in 1880,[2] does not seem to have been employed by any one else. It necessitates a double opening in the chest, and is otherwise too complicated for general use. When a valve of *bandruche* was used around the trocar, in the French method of operating which preceded the antiseptic, no arrangement was made for keeping up a valve action by the dressings. Dr. Cabot, in his paper of 1880, is the first writer I know of who has perceived the desirability of a valve. He recommends, however, to utilize the mackintosh of the Lister dressing for this purpose, allowing it to over-

[1] Read before the New York Academy of Medicine, Section on Pædiatrics, November, 1889.

[2] New York Med. Record, 1880.

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lap the gauze upon the skin, instead of, as is usual, falling short of the dimensions of the gauze. It seemed to me that this same idea could be more effectively carried out by placing a piece of rubber tissue, the size of my palm, directly over the opening, upon the skin and under the dressing. The piece of rubber was, of course, previously soaked in a bichloride solution. After the conclusion of my case, I found that Bouveret has advised a similar valve to be placed directly over the fistula, but this to be attached to the upper border by collodion, and left free below. My thin layer of rubber tissue, as soon as it was *in situ*, became closely applied to the skin by atmospheric pressure.

On the first dressing a valve had been imperfectly applied, and continued to be so until the eleventh day. Up to this time air was always drawn into the lung as soon as the dressing was removed. On the eleventh day a better valve was made of thin rubber tissue, and a week later, when the discharge had almost entirely ceased, no air was drawn into the chest when the valve and dressings were removed.

It might at first sight appear as if a piece of rubber, closely applied over the opening as above described, would interfere with the discharge of pus through the drain. The discharge is, however, effected during expiration, when the intra-pleural pressure becomes superior to the pressure of the external air against the valve, and, therefore, raises it sufficiently for fluids to trickle out.

Peyrot[1] has shown that in pleural effusions the type of expiration changes; the force of inspiration diminishes as the expansion of the chest becomes incapable of determining a vacuum, and expiration becomes the principal act. It becomes active instead of passive, as is normal, and may be decomposed into two periods. In the first the glottis remains closed, and air is pushed toward the depths of the bronchi. In the second period the glottis opens, and air is expelled with a sigh. This form of respiration is normal to birds. It also greatly resembles that of frogs, where the lungs are not contained in closed cavities, and where, therefore, there is no mechanism for aspiring air by the creation of a potential vacuum. While the glottis is open air enters the upper air-passages. The glottis is then closed, and air is jerked toward the termini of the bronchi by movements resembling those of deglutition.

This change of respiratory type is well shown on some respiratory tracings taken from the right side of a dog's chest during successive injections of plaster-of-Paris into the left pleural cavity. The expiration begins to be prolonged and divided into two phases during the third injection, and from that moment the inspiration continues to diminish in amplitude and duration—the expiration to increase in both.

In another dog, where a carotid tracing was taken during the injection, the trace immediately showed an increase in the respiratory oscillations, and a rise of blood-pressure to the extent of five millimetres of mercury. After the fifth injection there was a second rise of blood-pressure to the extent of ten millimetres. When twelve ounces of plaster-of-Paris had been injected, the pulsations were arrested, and the manometer needle fell fifteen millimetres.

The change of respiratory type in pleural effusions is not due to pressure exerted on the lungs, but to the inadequacy of the inspiratory expansion to effect its purpose of drawing air into the lung. This inadequacy persists after evacuation of the fluid and establishment of a fistula, although the abnormal positive intra-pleural tension be then greatly diminished. Therefore, the new type of breathing persists, though to a less degree. It would be very interesting to demonstrate this upon the human subject, but I have not been able to do so.

It is easy to see that the change of type is an advantage in the double task imposed—that of expelling fluids from the chest, which must be effected during expiration, and of reducing to a minimum the aspiration of air into the pleura, which would be effected during a vigorous inspiration. Correlatively with these desiderata, which inverts the normal ones, we find experimentally, and shall probably find clinically when we look for it, that the normal force of the respiratory movements is inverted—inspiration is diminished and expiration is increased.

The immobilization of the chest walls on the affected side while an intra-pleural effusion exists, and their collapse—especially marked in children after the fluid is evacuated—seem to be the mechanism by which inspiration is diminished. The cough, which, as in our case, comes on or is aggravated after the operation, is one of the means by which expulsive expirations are increased.

With these favoring circumstances, even the ordinary Lister dressing often suffices to solve the problem of so greatly diminishing the entrance of air through the fistula, that the air remaining within the pleura may become rarefied, the lung submitted to unopposed atmospheric pressure, and, therefore, reëxpanded. This is the true mechanism of the clinical phenomenon which Dr. O'Dwyer has recently discussed with a certain despair of finding the explanation. Although air be not absolutely excluded from the pleura, yet if it be not renewed, or renewed in less proportion than it is absorbed, it will soon become rarefied, and the conditions of pulmonary reëxpansion are then established as posi-

[1] Archives Gén. de Médecine, 1876.

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tively, though less vigorously, than when a complete vacuum exists.

Homolle[1] has contrived to measure intra-pleural tensions by means of a manometer attached by a lateral stop-cock to the trocar used in evacuating effusions. In a case of empyema the measurements varied thus:

Before any fluid was withdrawn the intra-pleural pressure was positive, and equivalent to ten millimetres of mercury. When 500 grammes had been withdrawn, it had sunk to 0.002 millimetre; when 900 grammes, the pressure became negative to the extent of 0.007 millimetre, and after withdrawing 1000 grammes, the negaive pressure was eighteen millimetres.

In the dog in whose pleura I injected water through an air-tight canula communicating with a manometer, the pressure was negative to the amount of five millimetres, and remained so after 300 grammes of water had been injected.

These facts show that the pleural cavity may contain some air and some fluid, and yet remain in a state of negative pressure relative to the atmospheric air, which, therefore, should not be opposed in expanding the lung.

As Weissberger has further pointed out, during the process of adhesion and obliteration of the pleural cavity the lung becomes tugged forward piece by piece, and when the adhesions are complete, the lung must be drawn out by every expansion of the thorax.

The presence of fluid in the chest when there is a free opening for it to run out, offers little more obstacle to the reëxpansion of the lung than does the pressure of fluid in the flask to the reëxpansion of the balloon. This is because the pressure of the fluid is always superior to that of the external air, and therefore easily overcomes it.

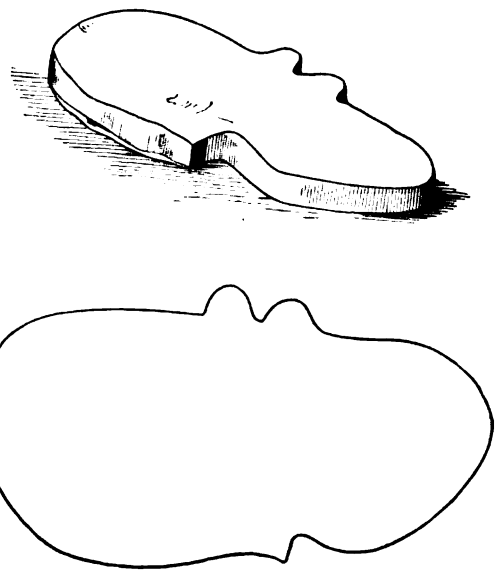
It is the clinical observation of frequent and even speedy recovery with the use of the Lister dressing alone,[2] which demonstrated that the above processes must take place as described.

But whatever beneficial influence, from the dynamic point of view, may be exercised by the Lister dressing, is certainly greatly intensified by the use of such a valve as I have described. I think there is no doubt that the cavity became contracted to a sinus on the fifteenth day after the operation, and that the tube might have been removed at least ten days earlier than it was.

To the extent to which the occlusion of the fistula during inspirations is complete, the normal type of respiration tends to be reproduced, and the cavity to be obliterated by more vigorous inspiration of the lung.

Peyrot remarks that when, being bound by false membranes, the lung is unable to expand, the diminution of pressure in the pleura seems to favor putrefaction or fermentation, even without contact with external air. The importance of the pulmonary expansion as a means of obliterating the cavity is so great, and as such has always been so well recognized, that the frequent failures of such methods as subaqueous drainage[1] seem more surprising than its successes. These failures are the best possible proof that the antiseptic part of the problem is as important as the mechanical; that sepsis is liable to occur through infection of the external wound, even when air is rigorously excluded from the pleura; and finally, that constant irrigation of granulation tissue that should be left in the greatest repose, interferes both with the healing and with the mechanical mechanisms of reëxpansion. During the treatment of the boy Frank, I took a certain number of casts of his chest, by a process which is very simple, but which I have not hitherto seen described. I encircled the thorax with a cytometer, and having carefully removed the instrument I placed it, closed, on a perfectly flat surface, and poured in fluid plaster-of-Paris. A cast was thus obtained, one-half an inch in thickness, and which accurately represented a transverse segment of the chest, and the inequalities of the two sides. The

CAST I.



In profile.

first cast was taken on the eighteenth day, a week after the irrigation. It represents a segment imme-

[1] Revue Universelle Médecine et Chirurgie, 1879.

[2] In one case reported by Bouveret, the empyema was completely cured in nine days, the shortest time on record. The expansion of the lung was so rapid that it certainly preceded the cicatrization of the pleura.

[1] Playfair: Transactions London Obstetrical Society, 1872.

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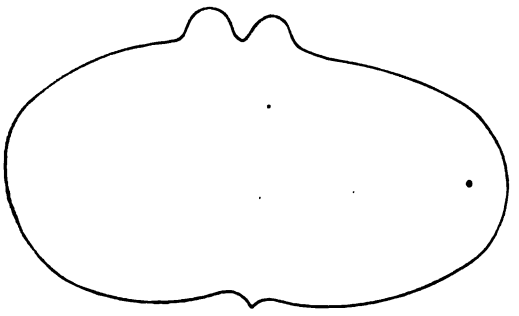
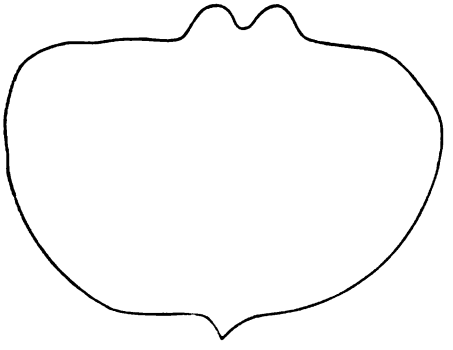
diately under the axillæ. The second cast is from the same locality, and is taken a week later, the twenty-fifth day. The two other casts were taken

CAST II.



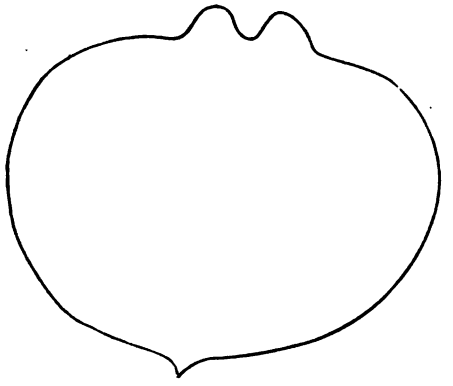
a few days after cicatrization. No. III. from the level of the axillæ, No. IV. from the level of the seventh rib. The odd-looking projections on the

CAST III.

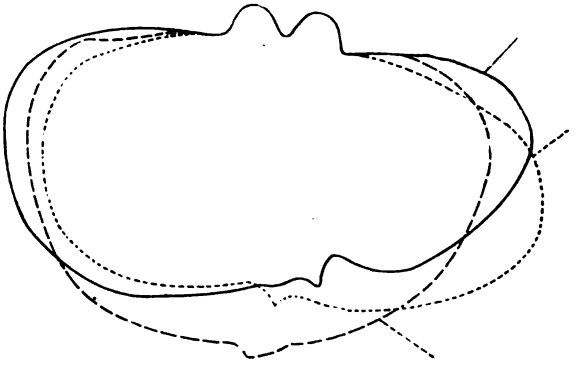


posterior aspects of these casts are due to a mistake made in the application of the cytometer, which was put on inside out. This does not, however, essentially change the character of the casts.

CAST IV.



The general shape of the affected side in the fourth cast well illustrates Peyrot's remark, that there is a total deformity of the chest, which results in a sort of "oblique oval thorax." I regret very much not to have secured a cast on the preceding week, as then the affected side was much more collapsed, the shoulder drawn over and downward, so that the alarmed parents inquired about the danger of permanent deformity. The cast of the eighteenth day shows: First, a deviation of the sternum toward the affected side, and half an inch to the left of an antero-posterior line traversing the segment from the vertebral column. Second, a marked diminution in circumference, in transverse and in antero-posterior diameters as compared with the sound side.[1] The cast taken the following week, however, shows that the differentiation on the first occasion had depended upon an enlargement of the right half of the chest, as well as on the contraction of the left. The deviation of the sternum was



Casts superimposed.

much less; and the right circumference both to the deviation and to the median line was two inches less than it had been before the transverse diameter was diminished an inch; the antero-posterior the least of all—a quarter of an inch.[2] The measurements of the left side are increased, not only over those of the previous week, but over those of the right side, except the antero-posterior diameter, which is still one-quarter inch smaller. As before, the transverse diameter exceeds the antero-posterior.

In the following week, after cicatrization of the fistula, the sternum has returned to the median line,

[1] Measurements, October 14th:

	Inches.
Circumference, left (affected side), to point of deviation of sternum	7½
Circumference, right, to point of deviation of sternum	10½
Circumference to median line, left	8¼
Circumference to median line, right	10
Transverse diameter to median line, left	3¼
Transverse diameter to median line, right	4¼
Antero-posterior diameter, left	3
Antero-posterior diameter, right	4

[2] Measurements, October 22d:

Circumference to deviation, left	9¼
Circumference to deviation, right	8½
Circumference to median line, left	9½
Circumference to median line, right	8
Transverse diameter, left	4¼
Transverse diameter, right	3¼
Antero-posterior diameter, left	3½
Antero-posterior diameter, right	3¾

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the diameters of the two sides of the chest are nearly the same, but the right circumference exceeds the left by one and a half inches. Below, at the level of the xiphoid cartilage, the circumferences are equal; to the median line, both diameters larger on the right side by one-quarter inch.[1]

It is interesting to be able to measure thus graphically the compensatory hypertrophy and shifting of the sternum and mediastinum during the collapse of the left lung, and the gradual diminution of this hypertrophy and restoration of normal proportions as the collapsed lung expanded.

In concluding this paper, which has not aimed at being systematic, but which has taken up details of interest as they occurred to me, there is one further remark to make. It seems to me that the two common observations of the frequency of empyema in children, and of its usually favorable course, are observations mutually correlative. The favorable prognosis does not apply to the empyemas of infectious diseases; nor is it solely due to the greater elasticity of the chest walls in childhood, permitting more facile collapse. But the appearance of pus in the effusion is to be considered less significant, because more easily excited by the same degree of inflammation. It would seem as if the rich system of subendothelial lymphatics in the pleura,[2] poured out leucocytes freely through the intercellular stomata, when these are dilated in the inflammatory hyperæmia of the pleura, and during the preliminary shrinkage of the endothelial cells.[3] Pus, therefore, appears in the effusion before the pleura has became thoroughly infiltrated, and continues to be secreted so long as the stasis remains in the vascular and lymphatic capillaries.

The Flushing Hospital.—The hospital at Flushing, Long Island, has recently received a bequest of $10,000 under the will of the late John Henderson, the well-known seedsman.

	Inches.
[1] Measurements, November 2d, under axillæ:	
Circumference, left	8½
Circumference, right	9½
Transverse diameter, left	3½
Transverse diameter, right	3½
Antero-posterior diameter, left	4
Antero-posterior diameter, right	4¼
At level of seventh rib and xiphoid cartilage—cartilage deviated to right:	
Circumference to median line, left	8¼
Circumference to median line, right	9½
Circumference to deviation, left	8½
Circumference to deviation, right	8½
Transverse diameter, left	3¼
Transverse diameter, right	3½
Antero-posterior diameter, left	4¼
Antero-posterior diameter, right	4½

[2] Klein: Anatomy of the Lymphatic System.
[3] Delafield: Studies in Pathological Anatomy.

A CASE OF DIFFUSE SUPPURATIVE PERITONITIS FOLLOWING PERFORATION OF THE APPENDIX VERMIFORMIS.[1]

BY JOHN R. WINSLOW, B.A., M.D.,
PROFESSOR OF PHYSIOLOGY IN THE WOMAN'S MEDICAL COLLEGE OF BALTIMORE.

AT 3.30 A. M., Wednesday, November 20th, I was summoned to see Willie S., aged nearly seventeen years, and was given the following history: After returning, apparently in perfect health, from his usual daily work, the boy had eaten very heartily of buckwheat-cakes at supper. About three o'clock in the morning he was seized with violent cramps, but was for some time unable to arouse any of the family, so that he had been suffering nearly an hour before my arrival. When I first saw him he was suffering from intermittent pains, not very frequent or severe, and was vomiting freely. He had slight fever (temperature 100⅘°, pulse 120).

Believing it to be an ordinary case of cholera morbus, I administered ⅙ grain of sulphate of morphine hypodermically, and directed the mother to give a dose of oil in the morning.

About the middle of the day I received word that the boy was still suffering somewhat, although better, and I was requested to call again. Upon my arrival I found the patient lying flat on his back in bed, complaining of some soreness in the lower portion of his abdomen, but particularly of nausea. He had no fever and a fairly good pulse. Upon inquiry I found that the oil had been given but with no effect. I palpated the abdomen superficially without eliciting any complaint or sign of pain. In view of the failure of the castor oil to open the bowels, I ordered half an ounce of magnesium sulphate, to be repeated within two hours if necessary.

Next morning (Thursday) I found that both doses of Epsom salts had been given without effect. Patient, however, felt better: temperature 97°; pulse fair; occasional vomiting. I then examined the abdomen with the greatest care for any induration or tenderness, and found nothing noticeable in these respects. During the examination, however, I noticed that the fibres of the abdominal muscles were somewhat more perceptible than usual, but would not describe the sensation as that of "board-like hardness." I inquired particularly as to the character of the vomited matter, and found that it presented neither the odor nor the appearance of fæces. In the evening I found much the same condition of affairs; temperature subnormal, pulse, however, very rapid—150. The bowels had not been moved. I then ordered a mixture, essentially a compound infusion of gentian, to be given by the mouth, and if vomited to be repeated *per rectum*.

Next morning (Friday) I found that the dose by the mouth had been vomited, but the enema had caused a slight movement of the bowels. Patient seemed better, pulse slower and fuller, temperature still subnormal. In view of the apparent improvement, I ordered the enema to be repeated. This caused, during the afternoon, several good though not copious evacuations of that greenish character

[1] Read before the Clinical Society of Maryland, Dec. 20, 1889.

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popularly ascribed to bile. An improvement in the patient's condition resulted.

Being, however, uneasy about him, I called early next morning (Saturday) to see him. I found him without radial pulse, and cold, but perfectly intelligent and complaining of feeling weak. I resorted to most vigorous stimulation, and in the course of an hour after the injection of whiskey and nitroglycerin hypodermically, I succeeded in developing a radial pulse. I then ordered tincture of digitalis ten drops, and left to secure the opinion of my brother, Dr. Randolph Winslow, as to the advisability of a laparotomy. Upon our return, within half an hour, we found the patient again without radial pulse, and laparotomy was, of course, out of the question. He became weaker and weaker, notwithstanding vigorous stimulation, and died just before 12 M. of the same day.

At my first visit in the morning, upon finding my patient in a condition of collapse, I had expressed the opinion to the mother that he had a "hole in his bowels," and after death I requested an autopsy. The request was, as is usual, refused, but was subsequently granted, owing to the persuasive eloquence of the colored undertaker, coupled with the remark that "they would do it anyhow at the health office."

Autopsy.—Upon the day succeeding death my brother and myself performed the post-mortem, and found the following conditions: The abdomen was considerably swollen and more discolored than is usual so soon after death. Upon making an incision through the peritoneum pus escaped through the opening in considerable amount; the intestines were somewhat adherent to the abdominal walls, but not to a marked extent. Upon exposing the abdominal contents a condition of intense purulent inflammation was revealed. The intestines were bathed in malodorous pus and covered in places by deposits of lymph. Pus was everywhere, even under the liver, and could only be drained off by cross-cutting the abdominal wall and turning the cadaver on its side.

After draining off about a quart of pus, we proceeded to examine systematically the intestinal tract; the upper portion seemed to be of normal color and appearance; the pelvic coils, however, were dark and enlarged. The focus of inflammation was in the right iliac fossa, which contained a considerable quantity of liquid fæces. The cæcum and adjacent portions of the colon and ileum were firmly bound down.

The vermiform appendix was intensely inflamed, and was adherent to the cæcum; it was much distended, especially near its middle, where a hard lump could be both seen and felt; just below this was a perforation of considerable size, with gangrenous edges; the lumen of the appendix was found to be largely filled with hardened fæces, which formed a cast of its interior.

Post-mortem Diagnosis.—General suppurative peritonitis. *Acute*, for there was no evidence or history of previous attack. "Fulminating," for its entire duration was less than four days.

In conclusion, allow me to emphasize the following points presented by this case:

1. Subnormal temperature (oral). With the exception of the incipiency of the attack, during the entire course of the disease the temperature was subnormal, varying from 95° to 97°, being at no time below the former or above the latter temperature.

2. The absence of abdominal tenderness. At no time was there marked tenderness of the abdomen. I sought carefully for it, and upon the morning of death my brother also palpated the abdomen without causing any expression of pain from the boy. He complained simply of soreness in the lower portion of the abdomen, which was diffuse and not confined to one side. Nor was this soreness marked enough to require the administration of opiates.

3. Obstinate constipation.

In the light of the post-mortem examination we may thus explain the course and symptoms of the case; the trouble originated with the impaction of fæces in the vermiform appendix; this occurred before, and was not connected with, the ingestion of the large meal of buckwheat-cakes. The colicky pains and fever marked the perforation of the appendix at a point weakened by ulceration. This permitted the escape of liquid fæces into the abdominal cavity, setting up at first localized and then general purulent peritonitis.

The obstinate constipation was due to paralysis of the intestinal walls, from the peritoneal inflammation.

Since the difficulty with these cases lies in the diagnosis, and since it is, as a rule, the general practitioner who must detect them, a few practical points in connection with the same may not be out of place.

Persistently subnormal (oral and axillary) temperature and absence of abdominal tenderness, present in this case, together with a "board-like" hardness of the abdominal walls, which was not present, are, if not pathognomonic, at least frequently associated with suppurative peritonitis.

One precaution,[1] however, in regard to the temperature is necessary. To appease the intense thirst of this condition, *ice and cooling drinks* are resorted to, which renders the taking of temperature *per os* fallacious.

The rectum, being in close proximity to the peritoneum, affords an almost direct means of obtaining the true temperature of the peritoneal cavity. In cases of inflammation, the rectal temperature is never subnormal. There may be a difference of several degrees between the axillary and the rectal temperatures, and the former may be subnormal, while the latter indicates high fever.

[1] A most valuable point raised by Dr. L. McLane Tiffany in discussing this case.

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TREPHINING FOR EXTRA-DURAL HÆMORRHAGE.

BY JOHN B. DEAVER, M.D.,
DEMONSTRATOR OF ANATOMY AND LECTURER UPON SURGICAL ANATOMY IN THE UNIVERSITY OF PENNSYLVANIA; ATTENDING SURGEON TO THE GERMAN, PHILADELPHIA, ST. MARY'S, AND ST. AGNES'S HOSPITALS, PHILADELPHIA, PA.

APPARENTLY, much has been done in the past two years in brain surgery, and by far the greatest number of operations and reported successes have been for focal or Jacksonian epilepsy. In this class of cases the immediate results have been good, but we cannot say this of the remote; and, therefore, in my judgment, I consider that beyond giving temporary relief, or beyond holding the trouble in abeyance for a time, these operations have accomplished most in demonstrating the amount of manipulation the brain is capable of permitting, providing that this is done by skilled hands, and that every possible antiseptic precaution is taken. Again, the lateral ventricles have been tapped, but this offers no more than temporary relief. It does not by any means remove the factor, which is slowly but surely killing the patient. This is true to a great extent in the case of tumors, as we know that the most common brain tumors are tubercular, sarcomatous, and syphilitic, and therefore in the event of their successful removal the patient is not restored to a normal condition, but is left crippled. The more favorable results have been obtained in tumors springing from the dura mater or membranes, and which are not strictly tumors of the brain substance but invade it by pressure, excavating for themselves a bed or nest.

Contrast with the above trephining for intra-cranial hæmorrhage, particularly of the extra-dural variety; here the operation, if done early, is in every sense a life-saving agent, practical as well as permanent in its results in the majority of cases.

Of the varieties of intra-cranial hæmorrhage we have four:

1. Where the blood escapes or finds its way between the inner wall of the cranium and the dura mater.

2. Where it finds its way into the sub-dural space.

3. Where it finds its way into the sub-arachnoid space and into the meshes of the pia mater.

4. Where it escapes into the substance of the brain or into the ventricles.

Erichsen gives the third variety as the most common form of intra-cranial hæmorrhage, while Prescott Hewitt gives the second; but in the cases which I here report, and in which I trephined, all were of the extra-dural variety.

When blood is poured out between the dura mater and the bone, in cases of fracture, the vessel that is torn, as a rule, is the middle meningeal artery. Mr. Jacobson has shown that the branches of this artery are more frequently ruptured than the trunk. The vessel is very frequently torn at the point where it crosses the anterior inferior angle of the parietal bone. The reasons for this are: 1. That the bone at the site of the groove for the artery is very thin. 2. That the vessel is so frequently buried in the bone that fracture without laceration of the vessel is hardly possible. 3. That this part of the skull is peculiarly liable to be broken. It has been shown that the artery may be ruptured by force sufficient to occasion detachment of the dura mater, but not great enough to fracture the skull. Next to the middle meningeal, the most frequent source of extra-dural hæmorrhage is the lateral sinus.

On referring to the attachment of the dura mater to the interior of the cranium, we find that it is very intimately adherent to the bone forming the interior of the wall of the skull; therefore this variety of hæmorrhage in this situation is barely possible. Over the vault of the cranium its attachments are comparatively loose, except along the lines of the sutures. Bell has pointed out that the dura mater of the vault may be separated from the bone by the vibration produced by a blow. Strike the skull of the subject with a heavy mallet, and on dissecting you find the dura mater shaken from the skull at the point struck. Repeat the experiment on another subject, and inject the head minutely with injection fluid, and you will find a clot of injection lying between the skull and the dura mater at the part struck, and having an exact resemblance to the coagulum found after a violent blow on the head. Tillaux has demonstrated that the adhesions between the dura mater and the bone are particularly weak in the temporal fossa, the most usual site of meningeal hæmorrhage.

In the diagnosis of extra-dural hæmorrhage the following points are to be observed:

The *mental condition* may be normal, or there may be cerebral irritation. Unconsciousness, complete or incomplete, or coma.

Condition of Pupils.—Both may respond to light normally. Both may be dilated, and show no response; or one may be widely dilated, and the other normal. When the dilated pupil corresponds to the injured side, it is caused, as pointed out by Hutchinson, by the pressure of a large clot, extending deeply down into the base of the skull, on the cavernous sinus, leading to fulness of the vessels, with protrusion of the eyeball and dilatation of the pupil. It is also accounted for by compression of the oculo-motor nerve, through the medium of the clot.

Respiration may be stertorous, or Cheyne-Stokes in character.

Pulse.—Little changed or rapid and feeble, depending largely on the severity of the concussion,

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or slow and full depending upon the severity of the compression.

Limbs.—May present any of the following conditions:· Hemiplegia, well or but little marked; monoplegia, paralysis, twitching, convulsions, or spastic rigidity.

Scalp.—Presence of contusion, or bagginess due to the injury; the latter also due to leakage from within the cranium through a fissured fracture.

The stages presented by a typical case of extra-dural hæmorrhage are three:

1st. Complete or partial unconsciouness, the result of the concussion or shock, caused by the fall or blow, as the case may be.

2d. Consciousness or lucidity. This stage may vary in length from a few minutes to several hours. "Is present in about one-half of the cases," says Jacobson.

I have observed that a very large hæmorrhage may produce compression at once; my observations being verified by post-mortem examination. Compression may also come on immediately, caused by coexisting depression of bone, injury to the brain, and alcoholism.

The following case, which is a good example of all three, is of interest:

H. K., twenty-three years old, white, was admitted to the German Hospital, December 19, 1889, 12.30 P.M., having met with an accident, the history of which is as follows: He had fallen a distance of fifteen feet through an elevator, landing on the top of his head. His condition, as described by the resident physician, Dr. Gerlach, upon admission, was: Complete unconsciousness; pupils responding to light; conjunctival reflexes active; respiration 24; pulse 100; temperature 99°. The scalp was much swollen and boggy over the whole of the left side and vertex, with a lacerated wound of the right ear at the junction of the concha with the scalp. Urine drawn, quantity small, normal in reaction and color; chemical tests for albumin and sugar negative. The patient remained in the above condition twenty minutes, when he regained partial consciousness for about five minutes; he was then seized with a general epileptiform convulsion, lasting one minute. The convulsion, as described by the Sister, was thought to have commenced in the right leg, but it became general so soon that she could not be certain. After the convulsion the patient could not be aroused fully, but showed some evidence of consciousness when spoken to. His breathing was embarrassed, the pulse full and strong. After an interval of ten minutes he was seized with another convulsion, lasting about double the length of the first, which was described by a second Sister present, as corresponding with that of the first seizure, but she too was in doubt about the spasm commencing in the right leg, as it became general so soon. Dr. Gerlach was sent for, but arrived too late to witness the convulsive seizures. The patient was now intensely cyanosed, respirations slow, deep, and stertorous, pulse slow and full. Upon my arrival at the hospital, but a moment or two later, very fortunately, I found his condition as above noted. Examination of the right side demonstrated the limbs to be slightly spastic, the left paretic. As there was but little doubt in my mind that the condition was one of intra-cranial hæmorrhage, and most probably of the extra-dural variety, there having been an interval of consciousness between the reaction from the concussion or shock, and the development of convulsions, I immediately prepared to trephine over the anterior branch of the middle meningeal artery. The scalp was quickly prepared for a strictly antiseptic operation, and ether administered. A large horseshoe flap, including all the layers of the scalp, with its convexity directed downward and backward, was turned up on the left side by carrying an incision from directly behind the external angular process of the frontal bone, to above and behind the parietal eminence; a fissured fracture was now seen following the coronal suture. To trace it throughout its entire length, two further incisions were made, one following the line of the coronal suture, the other from the termination of the latter, a short distance over the right parietal bone; when these flaps were reflected forward and backward, almost the entire vertex was laid bare. In the sub-aponeurotic space and infiltrating the areolar tissue of the scalp was an extensive extravasation of blood. The fracture extended from the beginning of the coronal suture to about one and a half inches beyond the sagittal suture; from this point a fissure extended obliquely downward and backward into the right parietal bone, also one obliquely forward and to the left, involving both the right and left frontal bones, stopping short of the supra-orbital margin. There was some bleeding from beneath the bone through the line of separation of the coronal suture, most marked on the left side. With a medium-sized trephine, an inch and a half in diameter, a button of bone was removed at a point one inch and a half behind the external angular process of the frontal bone, and one and three-quarters inches above the zygoma, when the anterior branch of the middle meningeal artery was exposed, the ends of which were ligated with catgut. The bleeding not being entirely arrested, with a pair of Hopkins's modification of the Rongeur forceps, the opening was enlarged in the direction of the groove in the squamous portion of the temporal bone, through which passes the posterior branch of the above vessel, when it was plainly to be seen that the source of the remaining hæmorrhage was most probably this branch near its point of origin; the opening was, therefore, enlarged in the direction of the spinous foramen of the sphenoid bone, and after cutting away bone to the extent of about one-half inch, the vessel was seen to be torn and bleeding freely. Both ends were tied with catgut, after which the hæmorrhage ceased. The cavity occasioned by the separation of the dura mater was washed out with a 1 to 2000 bichloride solution. I removed a second button of bone, three-quarters of an inch in diameter, from a point about three-quarters of an inch to the left of the sagittal suture, and about one

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inch posterior to the separated coronal suture. This corresponded to the upper and posterior margin of the cavity caused by the separation of the dura mater. My object in doing this was to enable me to pass catgut drainage through this opening and out of the one first made, thus securing a perfect outlet to any liquid that would otherwise have a tendency to collect in the cavity. Through this last opening I incised the dura mater and exposed the sub-dural space, to determine whether or not there was either the second or third variety of intracranial hæmorrhage associated with the extra-dural which I had already checked. This proved negative. The incision of the dura mater was closed with catgut suture. The end of a rubber drainage-tube, one-quarter of an inch in diameter, was placed in the lower and anterior of the two openings made in the wall of the skull, and brought out at the lower angle of the scalp wound, where it was fixed by a silver wire suture, loosely twisted. A second rubber drainage-tube, the same size as the above, was placed beneath the scalp flaps, above the two trephine openings and brought out in front and behind, where it was fixed by silver wire suture. The flaps were now completely adjusted and held in apposition by interrupted silver wire sutures. Through the tubes a 1 to 2000 solution of bichloride of mercury was passed, and the wound dressed antiseptically. A hypodermic injection of one-eighth of a grain of morphine was given to the patient, when he was removed from the operating table. Dry heat was applied to the body and an ice bag to the head. He reacted nicely and slept for four hours after the operation, when he awoke and was fairly rational. Being now able to swallow, he was ordered milk diet and given one-quarter of a grain of calomel, with two grains of Dover's powder every two hours. At 8 P. M., six and one-half hours after the operation, he was perfectly quiet and entirely rational. Pulse 90; respiration 28; and temperature 100°. Pupillary reaction normal; he was able to execute the ordinary movements with his extremities, and said that he felt pretty comfortable, although he had some pain in his head during the night and was somewhat restless.

December 20. Condition unchanged from that of the previous evening.

At 3.30 A.M., December 21st, had a slight convulsion, beginning in the right upper extremity with flexion of the hand upon the wrist, then the forearm on the arm, when it immediately became general. This lasted about half a minute. At 5.30 A.M. he had a second convulsion similar to the above and lasting about the same length of time. Between and after these convulsions he slept. At 8 A.M. the condition of the patient was good with the exception of the pulse, which was full and bounding. In addition to the calomel and Dover's powder, tincture of veratrum viride two drops and bromide of sodium twenty grains every two hours were ordered.

23d. Dressings changed, no pus; drainage-tubes clear; tincture of veratrum viride and bromide of sodium stopped.

26th. Calomel and Dover's powder stopped since slight mercurial stomatitis had developed, for which a gargle of chlorate of potassium and Listerine were given. From this time on, recovery was uninterrupted.

In closing my paper, I would not have it understood, from what I said in the beginning, that I am opposed to trephining for focal epilepsy, brain tumors, etc., for I am not; but I do not consider the results in these cases as brilliant as in cases of extra-dural hæmorrhage. Head injuries, both as regards their immediate and remote effects, are of interest to the neurologist as well as to the surgeon. I do not think it out of place to tabulate my rules for trephining in this class of cases:

1. In simple depressed fractures of the skull, with or without symptoms of compression.
2. In compound depressed fractures, with or without symptoms of compression.
3. In punctured or incised fractures, fractures of the orbital plate of the frontal bone, and punctures of the cribriform plate of the ethmoid, applying the trephine to the roof of the orbit at the inner angle, thus opening up the most dependent part of the cerebral fossa, thereby favoring drainage, which is the chief indication in this class of injuries.
4. Foreign bodies in the brain.
5. Impacted fractures in gunshot wounds.
6. In gunshot injuries of the skull.
7. In contusions of the scalp simulating depressed fracture I expose the wall of the cranium at the seat of the contusion, when, if I find a depressed fracture, I trephine. If a fissured fracture, I trephine if there is any hæmorrhage through the line or lines of the fracture.

CLINICAL MEMORANDA.

THERAPEUTICAL.

Ichthyol Ointment Externally in Inflammations of the Throat.—I have recently had occasion to treat a number of cases of an apparently œdematous sore throat, belonging in all probability to the same class of staphylo-amygdalo-pharyngeal inflammations as those to which Glasgow has particularly directed attention, and which he is doubtless correct in regarding as a variety of influenza. The point to which I now desire to call attention in regard to these cases is the great relief afforded by the inunction of a fifty per cent. ointment of ichthyol externally, beneath the angle of the jaw and along the border of the sterno-mastoid muscle. In three cases there were infiltration and tenderness in this region, which suggested the application. Its prompt and unexpected effect in relieving the pain which accompanied deglutition, suggested that the same measure might be usefully employed, even in the absence of external swelling. In most cases of sore throat, even simple follicular tonsillitis, there is usually more or less involvement of some of the fibrous tissues, whether of the submucosa of the subcutaneous connective tissue of the muscular sheaths, or of the various planes of fasciæ.

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The same relief followed in the cases without external manifestations, as in the others. I am inclined to a more extended use of the agent in this manner, and even to its topical application to the mucous membrane, with a view to ascertaining its true value. It is quite possible that this use of ichthyol is not novel, and I make no claims in that direction.

SOLOMON SOLIS COHEN, M.D.
219 SOUTH SEVENTEENTH ST., PHILA.

HOSPITAL NOTES.

A NEW OPERATION FOR HERNIA; EXCISION OF VARICOSE VEINS; NEURECTOMY OF INFERIOR DENTAL NERVE.

Abstract of a Clinical Lecture delivered at the New York Hospital.

BY ROBERT F. WEIR, M.D.,
ATTENDING SURGEON.

DR. WEIR presented to the class a patient on whom he proposed to perform the usual operation for the radical cure of hernia, *i*, *e.*, to cut down upon the sac, return its contents into the abdominal cavity, then ligate and remove the sac at the internal ring. In addition to this, he introduced a novel feature, consisting in the use of a bone plate, which would more effectually close the ring. The plate of bone was removed from the scapula of a recently killed dog, and a semicircular opening was cut out of its upper surface, so as to protect the spermatic cord from undue pressure. Several small holes were punched in the plate, which was thoroughly disinfected and introduced into the wound.

In these operations, which, in the separation of the sac from the cord, sometimes require careful dissection of the fasciæ, by tearing layer after layer, it is important before attempting to close the wound, to examine the tissues carefully, and make sure that those remaining are in a condition to survive the manipulation.

The next case was one of extensive varicosities of the leg and lower part of the thigh, which demanded more radical treatment than simple or multiple ligation. In these cases, the deeper set of veins is also varicose, and hence, if only the external vein be occluded, there is no more relief than results from removing the tension of the skin, and the patient is still annoyed, although not so much, by the stretching of the deeper parts. In Dr. Weir's experience, the best results have been obtained by the employment of what is known as Marshall's method, or resection of a long strip of the veins. Since the advent of antiseptics, this method has been more frequently resorted to, and usually with good results. The operation necessitates a long wound, and owing to the impaired vitality of the skin from prolonged tension, there is not infrequently a small track of suppuration along the wound, which delays the healing process.

In the present instance, the course of the veins was mapped out with aniline before applying the Esmarch bandage, in order to furnish a guide for the subsequent incisions. The vein in the upper and inner part of the leg, and extending up along the thigh, was then carefully exposed, and about eight inches of it excised, after applying a ligature above and below this portion, and to numerous branches issuing from within the fasciæ to the venous track. The same procedure was adopted with the smaller varicosities in the middle third of the leg.

Another case of interest was one of long-standing neuralgia, affecting the left side of the lower jaw, and particularly severe along the anterior distribution of the inferior dental nerve. There was also some pain experienced in the parts supplied by the auriculo-temporal nerve; but as this was only occasionally present, it was hoped that the operation of neurectomy on the inferior dental nerve would relieve the pain in both situations.

A section of the inferior dental nerve in its upper portion presents considerable difficulty. The operative field on the inside reaches from the dental foramen up to the foramen ovale, a distance of only about one inch, in a region which is not easy of access; and the gustatory nerve splits off from the main nerve, and remains in close proximity to the inferior dental. The inferior dental nerve can be reached best in its deeper path by dividing and turning down the temporal muscle, with or without section of the zygoma. A division of the lower jaw bone, as advocated by Mikulicz, gives ample room, and sometimes allows one to see up as far as the foramen ovale. This is sometimes followed by non-union, but does not cause impairment of the function of the articulation of the jaw, which sometimes follows the first-named operation. Dr. Weir considered both of these methods too severe for this case.

Here, he said, we had the choice of two operations: one known as Paravicini's, or the internal operation, and the other, the external incision. The internal operation consists in opening the mouth widely, and making an incision about one inch long just above the wisdom tooth, along the anterior edge of the lower jaw, and through the periosteum, which is to be peeled off (this is important, or one will go astray), and then feeling for the edge of the dental foramen, or for the spine known as the point of Spix. Occasionally, one can recognize by sight, though more commonly by touch, the nerve as it passes into the foramen, where it can be seized, and from one-quarter to one-half inch removed. This is a region which does not easily admit of operative work, for the gustatory nerve is close behind, and is sometimes cut by mistake for the inferior dental nerve, or damaged during the operation. Dr. Weir had had, in one of his own cases, a very severe hæmorrhage during this operation, in which the patient lost six or eight ounces of blood, and which was only checked by plugging the cavity with iodoform gauze. The hæmorrhage recurred the same evening, and the patient lost four or five ounces more. The bleeding was so free, that it was not likely that it came from the inferior dental artery, but was probably caused by seizing and drawing forward the internal maxillary artery.

This internal operation is an ideal one, on account of its leaving no scar; but otherwise it is not satisfactory, and in this case the external method was adopted.

An incision was made, beginning about one finger's breadth above the angle of the jaw, to avoid the branches of the seventh pair, and was carried up anteriorly along the edge of the jaw-bone until it reached the anterior border of the masseter muscle. Then it was curved upward slightly on the cheek. With the handle of the scalpel, the soft parts, including the muscle, were readily detached from the bone; and in this way, with a blunt retractor dragging the tissues upward, Dr. Weir was able

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to reach to a point about opposite the point of Spix. The bone was exposed and chiselled away, and after a slight hæmorrhage from the inferior dental artery had been controlled by pressure with a cotton-wrapped probe, the nerve was drawn down strongly, and about three-quarters of an inch removed. The masseter muscle was sewed to the edge of the jaw with catgut, a horse-hair drain inserted, and the skin wound closed by numerous fine black silk sutures. Black silk sutures are more easily seen when it is desired to remove them; and in order to reduce the scar to a minimum, it is important to introduce a great many of these sutures, and to begin removing them the following day. If there is much tension, two or three sutures should be left in on the third day, but otherwise, all of them should be out at that time.

Dr. Weir said that for the next day or two there would probably be a good deal of swelling of the face in the neighborhood of the wound, in which the parotid gland would in all probability participate.

MEDICAL PROGRESS.

Treatment of the Uric Acid Diathesis.—In the treatment of the uric acid diathesis DR. HENRY PICARD advises the administration of water in large quantities, believing that it is of use in assisting mechanically in the expulsion of uric acid that may be deposited in the kidney and in diluting that which may be contained in the blood. Water alone possesses such slight solvent effects upon uric acid that to it should be added an alkali. Lithia greatly augments the solvent power of water and may be given in the following mixture:

℞.—Carbonate or citrate of lithium		15 grains.
Pulverized sugar	. . .	1½ drachms.
Citric acid	. . . .	3½ "
Bicarbonate of sodium	. .	4½ "

Mix and divide into sixteen powders, of which one should be given in a glass of water four times daily.

The solvent effects of the potassium salts are also well marked and they may be administered thus:

℞.—Bicarbonate of potassium	.	1½ ounces.
Citric acid	. . . .	1 ounce.
Water	. . . . .	12 ounces.—M.

One ounce of this in three or four ounces of water makes an insipid solution that may be given even to children.

Some persons do not tolerate the alkaline carbonates well and, for such, the phosphate of sodium, administered in doses of from thirty grains to two drachms, is an efficient substitute.

The alkaline benzoates are also excellent solvents, and change the insoluble uric acid into the soluble hippuric. The benzoates of sodium and calcium are perhaps the best and may be administered in solution or in pill form in doses of from three to thirty grains. Benzoic acid may also be used, the following being an excellent formula in which to administer it:

℞.—Benzoic acid	. . .	15 grs. to 1 drachm.
Phosphate of sodium	.	2½ drachms.
Syrup	. . . .	7 "
Water	. . . .	3 ounces.—M.

One-fourth to be taken at a dose.—*Journal de Médecine de Paris.*

Iodoform in Surgery.—The true position of iodoform as a surgical dressing has long been questioned. On the one hand are the surgeons who declare that it is a valuable antiseptic; on the other, are the mycologists apparently proving by laboratory experiments that it has little or no antiseptic power. In the *Annals of Surgery*, January, 1890, MR. A. ERNEST MAYLARD, of Glasgow, records an elaborate series of observations upon the influence of iodoform on bacteria, which seem to prove that iodoform in great excess has a germicidal effect upon the microbes of pus. Where the microbes are in abundance, some retarding influence appears to be exercised by iodoform upon their growth and even some diminution in the numbers which subsequently develop; but, if the number present be large, no germicidal effect is observed.

The general result of this series of experiments seems to show that iodoform has some distinctive power, and that its supposed or acknowledged value in surgery is borne out by experiments in the laboratory.

It may fairly be assumed that where iodoform is added to a wound, it will be largely in excess of any microbes present, and, therefore, precisely in the position in which the experiments seem to indicate that its antiseptic power lies.

As compared with many other much more powerful antiseptics, the special value of iodoform must rest upon its prolonged action. Solutions are absorbed, or carried away by the discharges, whereas iodoform remains as an almost permanent application. So that it is not infrequent to find, on the removal of a dressing, some weeks after its original application, the iodoform still on the surface of the wound, and as active—if the pungency of the odor may be accepted as a criterion of the continuance of its antiseptic power—as when first used.

[These observations do not support the conclusions of Tilanus (*Centralblatt f. Chirurgie*, January 4, 1890), whose experiments convince him that iodoform has a certain amount of influence in retarding the growth of tubercle bacilli, but that in fresh wounds and non-specific suppuration it is only useful as a dry protective.—ED.]

Creasote in the Treatment of Chronic Gonorrhœa.—DR. BREIMA recommends in the *Riforma Medica* the following injection for chronic gonorrhœa:

℞.—Creasote	. . . . .	10 minims.
Fl. extr. of hamamelis Fl. extr. hydrastis canadensis	. .	of each 15 "
Rose water	. . . .	4 ounces.—M.

This should be slightly diluted with warm water before using.

Benzoate of Bismuth in the Treatment of Chancroids.—DR. FINGER has treated in the past eighteen months sixteen cases of soft chancre with local applications of bismuth benzoate. In each case the surface of the sore was thoroughly washed, a thin layer of the benzoate applied by means of a soft brush, and the whole covered with cotton held in place by an adhesive strap or bandage. The dressings were changed once or twice in twenty-four hours. The applications, particularly the first, were followed by slight burning and prickling sensations, which, however, were never severe. No inflammation was pro-

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duced by the drug, and in twelve of the sixteen cases the results were excellent, the surface of the ulcer becoming healthy and the discharge of pus checked by the third or fourth day, so that simple dressings were sufficient to produce cicatrization. In five cases the effects were not so prompt, but even in these the duration of treatment was shorter than with the methods usually employed.—*Internationale klinische Rundschau*, January 5, 1890.

Operation for the Deformity of Prominent Ears.—In the *Annals of Surgery*, January, 1890, PROFESSOR KEEN describes a new operation which he has recently performed for the common deformity of prominent ears. The operation consisted in removing from the long axis of the posterior aspect of the auricle a long oval piece of skin, the cartilage being laid bare by the dissection. A strip of cartilage of the same length, but narrower and V-shaped on cross section, was then removed, taking great care not to cut through the skin on the opposite side. In the left ear three catgut sutures were introduced through the cartilage in addition to those in the skin. On the right side reliance was placed entirely on the sutures through the skin. The result was equally satisfactory on either side. The two operations, performed at the same time, were attended with very free bleeding, which, however, was easily controlled. The stitches were not removed until the tenth day. The result was perfectly satisfactory.

Œdema as a Symptom of Pneumonia.—DR. STEMBO, in the *Berliner klinische Wochenschrift*, No. 40, 1889, calls attention to the occurrence of fugitive œdema in the course of acute diseases as an indication that pneumonia is about to set in. The œdema appears usually twelve to twenty-four hours before the physical signs of pneumonia. It is not always distinct, and often it is only by the closest attention that it can be detected, and that usually on the lower lid. It is more marked the weaker the patient, the longer the primary disease has lasted before the onset of the pneumonia, and the higher the temperature in the course of it; whilst a free use of antipyretics is not without influence in preventing it. Further, it is more evident on the side corresponding to the pneumonia, or, indeed, may be confined entirely to it. In children, and in weak and unconscious persons, the œdema is found on the side or in places which are most dependent. It often passes away in twenty-four to thirty-six hours, and seldom remains after three or four days. If it remains longer and cannot be removed by proper remedies, it is of grave import. That it is not due to renal complications is shown by the absence of casts in the urine, while only in a few cases are traces of albumin present. Stembo gives three examples out of a number of cases in which he has observed this symptom. The first was a child, twenty months old, suffering from enteric fever. On the tenth day slight œdema, especially of the right side of the face, but of the whole body as well, was observed. The temperature was 104°, pulse 148, and respiration 56. Extensive rhonchi were heard over the lungs, but no bronchial breathing; and there was no dulness. Next day dulness showed itself in the two lower lobes of the right lung with bronchial breathing. On the fourth day from this the œdema had gone, and two days later the lung had cleared up. In the second instance, that of a woman of fifty-five, suffering from typhus, œdema of the face appeared on the eleventh day; the same evening pneumonia of both lower lobes set in, and death followed in two days. The third case was one of bronchitis in a seven-months' old child. After seven days capillary bronchitis occurred; on the fifteenth day œdema of the face and dorsum of the feet appeared, followed the succeeding morning by catarrhal pneumonia of the left side; here the œdema began to disappear in three days, and was entirely gone before the pneumonia cleared up. This phenomenon is explained by the observer as mainly due to the weakness of the heart which takes place in illness of long standing. The onset of the pneumonia increases the work of the enfeebled organ, and its temporary failure is shown by the fugitive œdema.—*The Practitioner*, January, 1890.

Pseudo-angina Pectoris.—DR. DRESCHFELD, of Manchester, divides pseudo-angina pectoris into the hysterical, neurasthenic, gouty, and gastric forms, and the form due to excessive use of tobacco. According to the author, hysterical pseudo-angina pectoris is distinguished from true angina by the following points:

1. The age of the sufferer. Persons suffering from hysterical angina are young, as a rule, but *true* angina may occur in young females.

2. The attacks occur not after violent exertion, but often without a palpable cause, and in some at regular intervals.

3. The radiation of the pain is along the sternum and along the insertions of the diaphragm at the back. There is often marked hyperæsthesia of the skin over the left mamma, where there is occasionally a distinct hysterogenous zone.

4. There is almost always marked dyspnœa, and the vaso-motor phenomena are very prominent.

5. The patient shows a great deal of excitement, and there is not the anxious expression of countenance characteristic of true angina.

6. The coexistence of other hysterical symptoms, such as hemianæsthesia, contraction of the field of vision, hystero-epileptic attacks, etc.

7. The absence of any signs of heart disease.

Dr. Dreschfeld has seen within the last three years several well-marked cases of the neurasthenic variety, the prominent and characteristic features of which are as follows:

1. The attacks come on without any muscular exertion; in one case they came on almost every morning on rising, and in another case after worry or mental trouble.

2. The attacks are short. The cardiac pain is not very great, but there are marked pallor and irregularity of the pulse which often last for days.

3. The symptoms improve on walking or other slight muscular exercise.

4. The attacks are often either preceded or followed by insomnia.

In the form caused by tobacco the anginal attacks are preceded by an irregular, occasionally intermittent, pulse, by palpitations which persist for some time, and in the attack itself there is pain, usually limited to the heart, and great oppression. The attack is followed by pallor and sweating, and the pulse may then become

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slow, and show increased arterial tension, or remain quick and intermittent for some time.

The symptoms disappear as soon as the patient gives up smoking. In considering this form of angina, one has, however, to bear in mind that occasionally excessive smoking may lead to atheroma and to affections of the myocardium and valves of the heart, and thus true angina may occur in chronic nicotinism.

In gout we often meet with true angina, yet pseudo-angina does occur, and here again the absence of cardiac hypertrophy and of atheroma will assist us in the differential diagnosis. The attack is characterized by a more limited pain over the heart, by general vaso-motor disturbances, and especially also by an irregular and intermittent pulse, which may last for many weeks or even months.

Gastric and intestinal affections produce anginal attacks in a reflex manner. Palpitations, an intermittent and irregular pulse, with more or less dyspnœa and general discomfort, are often noticed in dyspeptic persons and in affections of the liver. Occasionally, however, we have in these diseases pseudo-anginal attacks.

These attacks are characterized by the following features: They come on after meals; there is often epigastric pain, with associated pains in the back from the fourth to the sixth dorsal nerve; the anginal pain is præcordial, rarely substernal, and not so severe as in true angina; the pulse is irregular; there is pallor, often with profuse sweating. The attack usually lasts several hours. —*The Practitioner*, January, 1890.

Causation and Treatment of Rickets.—KASSOWITZ has recently put forward at some length his views on the etiology of rickets. The old theory of a deficiency of lime salts in the food has already been given up, though it is admitted that unsuitable food and chronic diarrhœa may keep up the existing disease. Pathology shows us that the bones are not simply deficient in lime, but that a condition of inflammatory hyperæmia exists in the affected parts. This is the essential element of rickets. As regards the theory that disturbed digestion is the cause of rickets, statistics from Vienna by Kassowitz, and from Christiana, Munich, and Kiel, by other authors, prove that rickets is most prevalent in the spring, reaching its maximum in May and June, and then declining to its minimum in November, whereas digestive disturbances are most prevalent in summer and autumn. Statistics also show the evil of close confinement in winter. A long residence in closed rooms, and the breathing of impure air, seem to be the most potent factors in the causation of rickets. Hence the rapid recovery on removal of patients to the seaside or mountains. If this hygienic treatment cannot be adopted, help must be given in other ways. Children should be sent out properly clad into the fresh air daily. Lime salts should not be given—ordinary food contains plenty of lime—nor should starchy foods be restricted and a meat diet advocated; the former are by far the most suitable for children. Acting on Wegner's discovery that phosphorus in small doses restricts the formation of vessels in the growing bones of young animals, Kassowitz advocates its exhibition in cod-liver oil as a means of overcoming the hyperæmia of the bones. The dose of phosphorus given is $\frac{1}{100}$th of a grain in a teaspoonful of oil. This treatment is already in use, and deserves a still more extensive trial. But, after all, hygienic measures must take the first rank in importance, for the disease is plainly one of defective hygiene.—*British Medical Journal*, January 11, 1890.

The Use of Calomel in Phthisis.—DR. DOCHMANN employs calomel in the treatment of pulmonary phthisis, particularly in the early stages, and claims that his results are good. He prescribes it in pills according to the following formula:

℞.—Calomel . . . . 8 grains.
Pepsin . . . . . 50 "
Tincture of opium . . . 30 drops.
Ext. of phellandrium, sufficient quantity.—M.

Make into 60 pills.

On the first day of treatment 12 pills (2 pills every two hours) are to be administered; on the second day 10 pills; on the third day 8 pills. After this the patient may take 6 pills daily, with occasional periods of intermission if not well borne. If hæmoptysis occurs, ergotin should be added to the pills; if cough is violent, extract of hyoscyamus.—*Prager medicinische Wochenschrift*, January 22, 1890.

An Application for Burns.—NIKOLSKI employs the following mixture as an external application in burns of the first and second degrees:

℞.—Tannic acid, Alcohol . . of each 10 parts.
Ether . . . . 80 " —M.

—*Deutsche medicinische Wochenschrift*, January 16, 1890.

Incompatibilities of Bismuth Subnitrate.—Subnitrate of bismuth is frequently prescribed in mixtures with bicarbonate of sodium, the combination of the two causing a slow effervescence, which sometimes bursts the bottle containing them. Again, the subnitrate with mucilage of tragacanth forms in a few hours a thick clot, which will hardly pour from a bottle. Both these results are explained by the fact that subnitrate of bismuth, though basic in constitution, is acid in reaction, and readily parts with its acid, especially in the presence of an alkaline carbonate. With bicarbonate of sodium and water, the subnitrate changes to carbonate, nitrate of sodium being formed and carbonic acid liberated. It is obvious that in such a mixture a patient would be taking mainly carbonate of bismuth and nitrate of sodium, the important antacid properties of the sodium salt being lost. For these reasons it is best to prescribe *carbonate* of bismuth, which is compatible with alkaline carbonates, does not thicken mucilage, and from its comparative lightness remains longer in suspension than the subnitrate. The following is a very satisfactory mixture:

℞.—Carbonate of magnesium, Carbonate of bismuth of each 15 grains.
Tincture of nux vomica . . . 5 minims.
Chloroform water (Br.) . . . 1 f℥.—M.

To be taken in one dose.—*Illustrated Medical News*, January 25, 1890.

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SATURDAY, FEBRUARY 15, 1890.

DELIVERY BY UTERINE EXPRESSION.

THE employment of pressure on the fundus of the uterus through the abdominal wall, to expedite a tedious labor, is a custom as old as the world. Dr. Engelmann, in his most interesting and valuable work, *Labor Among Primitive Peoples*, describes how it is resorted to in some form in almost every labor among uncivilized races, and in our own time it is well known that midwives in the far East resort solely to external pressure in conducting labor. Although often practised with seeming brutality, which must surely have been a not infrequent cause of death, yet its widespread and perhaps instinctive employment suggests that the method is not wholly devoid of usefulness. Bearing in mind the danger of rupture of the uterus and other dangers consequent to its employment, it should not, we think, be totally excluded from the obstetric procedures of the present day. The older authors since Albucasis and Paré have recommended light pressure over the fundus to hasten delivery, and no obstetrician will question the judicious application of the Credé method of placental delivery. The same may be said of pressure through the abdominal wall to assist the after-coming head through a normal and even contracted conjugate, as has been recommended by Martin, Charpentier, and others.

In 1867 Kristellar, and in 1872 Suchard, went so far as to advise the employment of uterine expression to dilate the cervix and overcome spasmodic contraction of the os. The verdict of the profession, however, is that such a procedure is dangerous. To terminate a tedious labor forceps or version is certainly more rapid and less harmful. Nevertheless, a case reported by M. Grynfeltt, in the *Gazette Hebdomadaire dès Sciences Médicales*, clearly demonstrates that circumstances may arise when it may be necessary to "push the fœtus out of the uterus instead of extracting it" (Barnes). Grynfeltt saw the case referred to in consultation. A multipara, in labor thirty-nine hours; L. O. A.; prolapse of left arm had prevented engagement of the head; os completely dilated; membranes unruptured. While explaining to the family the necessity of performing the operation of version, the membranes suddenly ruptured, the cord prolapsed, and the head entered the pelvic cavity. Forceps were not at hand, and to save the life of the child uterine expression was quickly resorted to, the two hands grasping the fundus, thumbs in front, as in placental expression after Credé. In two minutes the child was delivered alive, without subsequent discomfort to mother or infant.

Similar expression has been successfully employed in the management of miscarriage. In reckless hands the method is not devoid of danger, yet employed with ordinary skill and intelligence it deserves a place in obstetric practice to meet the not uncommon emergency described.

THE MALARIAL HÆMATOZOON.

AMONG those who have contributed to our knowledge of malarial infection the name of Laveran will always be preëminent, notwithstanding the fact that in the bibliography of the subject it has to be sought for among a host of others. A discovery is no sooner announced than it is subjected to the most rigid scrutiny, and perhaps added to or subtracted from until the discoverer may think himself fortunate if the entire credit of his research has not been divided by numerous investigators who have done little more than follow in his footsteps. The thoroughness of Laveran's first investigations was such as to preclude them from this fate, and, therefore, the work which they suggested to others was little else than confirmatory. Notwithstanding the almost unique fact of Laveran's undisputed claim to priority in this matter, it is, perhaps, not too much to say that during the last five years many hundreds of

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medical students have carried away with their diplomas the conviction that their medical teacher who had given such brilliant demonstrations of the *plasmodium malariæ* was the real discoverer of the parasite.

Such an error might be due to no actual fault on either side, but solely to the lazy constitution of the average mind, which hates investigation. For such reasons we welcome Laveran's latest communication (*Archives de Médecine expérimentale et d'Anatomie pathologique*, January 1, 1890), in which he discusses: 1, the nature of the malarial parasite; 2, the manner in which it gives rise to the symptoms of malaria; 3, the technique of its study.

The question whether the well-known appearances of malarial blood are due to a single polymorphous parasite he answers in the affirmative, and for the following reasons: First, it is highly improbable that the different symptoms of malarial poisoning could be due to several parasites of different species, for these symptoms are constantly interchanging, while the unity of paludism, both from the clinical and anatomical points of view, is unquestionable. Secondly, since its discovery, the malarial organism has been proved to be one of a large family of polymorphous hæmatozoa, some of which bear the closest resemblance to it. This is particularly the case with the hæmatozoa of birds, which have been so closely studied by Danilewsky. Laveran was so struck with this resemblance, although he points out certain differences between them, that he endeavored to propagate the plasmodium in the blood of birds, but without success.

The following *résumé* embodies the chief facts concerning the malarial hæmatozoon, and leads irresistibly to the conclusion that it is the morbific agent of paludism in all its varieties:

1. The parasite has been found in all countries in the blood of those affected with the malarial poison, and the numerous descriptions of its appearance are remarkable for their identity.

2. The parasite has never been found in the blood of those not affected with the malarial poison.

3. The development of the parasite is intimately connected with the production of melanæmia, which is the characteristic malarial lesion.

4. The salts of quinia cause the parasite to disappear from the blood, and this takes place synchronously with the cessation of the fever.

5. Malarial disease has been transmitted from one person to another by injecting into the veins of a non-malarial individual a small quantity of blood containing the parasite.

The mode of life of the malarial organism outside of the human body is as yet unknown, and it seems probable that its aspect under such circumstances is different from that which it presents in the blood of man. It is possible that, in one phase of its existence, it may be the parasite of some other animal or of a plant, and Laveran suggests the possibility that the mosquito may play a *rôle* in its transmission.

The manner in which the hæmatozoon gives rise to the symptoms of malarial poisoning is a question of great interest. Laveran believes that its action is both vital and mechanical. In virtue of the former it destroys the red corpuscles, and the extent of this destruction is shown by the anæmia and the accumulation of pigment in the vessels and tissues.

The nervous symptoms—such as the chill, fever, headache, etc., are due to irritations of the cerebral nervous system.

The failure of all attempts to cultivate the malarial organism has been advanced as an argument against its parasitic nature, but no better success has attended the culture experiments in the case of the filaria sanguinis.

The hæmatozoon malariæ does not belong to the class of schizomycetes, and, therefore, it is not surprising that its behavior is different from that of micrococci and bacilli.

These are the essential facts concerning the malarial germ as set forth by its discoverer. They are of the greatest practical interest, for already, in numerous instances, the diagnosis of some of the most obscure forms of malarial poisoning has been made by the detection of the parasite which is its constant attendant.

NEW INVENTIONS.

SCISSORS FOR TENOTOMY.

By EDWARD JACKSON, M.D.,
PROFESSOR OF DISEASES OF THE EYE IN THE PHILADELPHIA POLYCLINIC.

THE ordinary scissors, with ring handles, require for any given position of the scissors that the hand shall be brought into a certain position; there is only one relation of hand and scissors that gives the operator good control of his instrument. When doing a tenotomy of one of the recti muscles of the eye, to get a smooth cut in the proper direction the blades of the scissors must have a certain position and direction, relative to the insertion of the tendon and the eyeball. But the eyeball is capable of free rotation; and does rotate often in the course of

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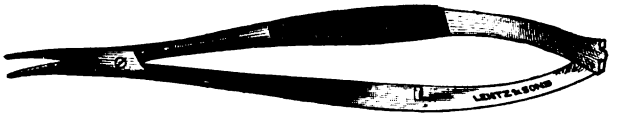
the operation. And with the ring-handled scissors, to keep just the right relation between the blades and the tendon, each movement of the eye must be followed by a corresponding, but greater, movement of the hand and arm. And no matter how well you may arrange your patient and plan the little operation, you will find before it is over that you are getting in your own light, or your fingers or the assistant's, or the patient's head, is very much in the way.

This difficulty is largely avoided by using scissors with spring or forceps handles, like those shown, two-thirds the natural size, in the accompanying cut. These



can be readily grasped, and satisfactorily used with the hand in any one of many positions with relation to them. So that it is possible to adapt the blades to any position of the eyeball, without much change in the position of the hand.

The scissors represented, which have been made for me by Charles Lentz & Sons, of Philadelphia, conform in certain other important respects to the requirements of a tenotomy operation. The joint is particularly broad and firm, to prevent over-riding; yet the blades are sufficiently delicate. The blades are but slightly curved, but this curve is near the point, where it is needed. The points are as blunt as is compatible with easy introduction, the blades are not unnecessarily long, and are so formed that the line of the cutting edge passes near the rivet, and a comparatively slight spreading of the points gives sufficient length of blade to sever the whole width of the tendon, while they exert very little of the forward thrust that tends to push the tendon off the hook, allowing it to escape uncut.

CORRESPONDENCE.

INTESTINAL ANASTOMOSIS.

To the Editor of THE MEDICAL NEWS,

SIR: It seems to me that the subject of intestinal anastomosis should be treated with great care. Senn's numerous operations[1] on animals were made, not only to ascertain if the operation could be made successful for the hopeless condition of complete stenosis, but also to find what method would be most surely successful.

The result of his laborious experiments, laborious because conducted with extreme antiseptic precautions and with a variety of material, may be told in a sentence:

"Partially or completely decalcified bone plates hardened in alcohol, *remain firm* for a sufficient length of time to answer the purpose of retentive measures until firm adhesions have formed between the serous surfaces held by them in approximation. In a few days the disks completely disappear by softening and disintegration. The plates, when properly fixed in their places and tied together with sufficient firmness, not only *coaptate an extensive area of serous surface*, but they at the same time secure *perfect rest* for the parts it is intended to unite until firm adhesions have formed."[1]

This is the whole matter in a nutshell; the fewest number of apposition sutures, not more than four in the plates; this to save time and thus prevent shock; coaptation of an extensive serous surface which secured perfect rest of the parts to be joined for a time sufficient for union.

Senn's numerous operations on animals, with a number on human subjects, show magnificent results. If, after a suitable series with the quickly softening catgut plates or yielding rubber rings an equal success is reported, one might be willing to trust them for what at best is an appalling necessity.

To Dr. Senn the trouble of having prepared one or ten bone disks is not the question; but, What is to be the result for a human life? Standing at his side and seeing him insert the plates in a human intestinal tract the question comes with tremendous force, Will the coaptation be perfect, or will there be a leak and peritonitis and death? Can it be believed that a segmented flexible rubber tube, as has been recently described, impinging only at its convexity will as surely resist tympanitic and other pressure as will the broad firm grasp of disk surfaces?

The operation is a new one; a great thinker has wrought it out with almost infinite pains; it offers relief to a class of cases who before were without hope. Why be in such haste to improve upon it before it is fairly tested by surgeons generally? IRA MANLEY, M.D.

MARKESAN, WISCONSIN.

[1] Experimental Surgery, Senn, page 422.

DETROIT.

To the Editor of THE MEDICAL NEWS,

SIR: At a recent meeting of the Detroit Medical and Library Association, Dr. Flinterman presented a very interesting specimen, embracing the two kidneys from an individual who died of uræmic poisoning. The kidneys were very large and their substance was almost completely obliterated by the formation of numerous cysts.

Dr. Mills read a paper on "Heart Diseases," which called forth a prolonged debate.

At a subsequent meeting, Dr. Rowley exhibited a very rare specimen, secured post-mortem, which showed the two kidneys united by a fleshy band, and giving the entire mass a horseshoe shape. The mass uniting the two kidneys will be examined microscopically to determine its histological structure.

Dr. Campbell exhibited a scirrhus of the lesser curvature of the stomach with perforation of the posterior wall. Death in this case was sudden, and presumably due to perforation and shock.

Dr. T. A. McGraw has recently returned from a five-months' sojourn abroad, and has resumed work in the college. He was banqueted a few evenings since by the students and members of the faculty.

THE CONTAGIOUSNESS OF INFLUENZA.

To the Editor of THE MEDICAL NEWS,

SIR: The following observations bearing upon the question of the purely contagious nature of the recent

[1] Loc. cit., pp. 446 to 455.

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epidemic of "grippe," may be of some interest to your readers:

Fearing an attack of the prevalent influenza might prove disastrous to many of the invalids at the Adirondack Cottage Sanitarium, the place was quarantined as soon as the epidemic appeared in the neighborhood. The sanitarium is only a mile from the village, and at this date, January 30th, no outbreak of the disease has taken place there, while it has attacked the great majority of all the people living in the surrounding country, as well as the visitors at the hotels and boarding-houses. I am not aware of any other case being on record where quarantine has proved in any degree successful in averting epidemic influenza.[1] E. L. TRUDEAU.

COMBINED METHODS OF TREATING AN ASPHYXIATED INFANT.

To the Editor of THE MEDICAL NEWS,

SIR: ON August 10, 1889, I was asked to aid a midwife in the case of Mrs. C., near Wayne. Upon arrival the head was found to be well down and the parts in good condition, there being no real impediment to the delivery which, without instrumental aid, occurred within ten minutes. The mother, well developed and healthy, was not lacerated, the placenta was slightly adherent to fundus. The infant—male, eight and one-half pounds—was pallid (not cyanosed) with normal pulse and both chest-walls collapsed. A few moments after birth it elevated the eyelids, rolled the eyeballs as if observing the surroundings, and then closed the lids. Afterward it remained limp and pallid, with as good a pulse and fair a temperature as the condition warranted, until respiration took place, about an hour later. All the usual methods employed to excite respiration were thoroughly tried, but without avail—the lungs remained collapsed. After fifty minutes spent in this endeavor, I essayed, and readily succeeded in, intubating the larynx.

The following are the details, so far as they relate to the modification of the method in vogue in France: A nozzle of my obstetrical syringe was inserted into the end of the male catheter, the air with which the syringe was filled being drawn each time through a thick pad of antiseptic gauze moistened with twelve per cent. hydrogen dioxide. The air was cautiously pumped into the lungs, the arms at the same time being elevated. On withdrawing the nozzle, the lowering of the arms and pressing them against the sides expelled the air. Thus the two methods, of Sylvester and insufflation, were employed simultaneously. In twenty minutes the respiration became automatic. To-day the child is apparently healthy in all respects.

Among some 900 cases at full term, the above is the only instance in which, when the case demanded it, some one of the usual methods did not suffice.

G. E. ABBOT.

BRYN MAWR, November 29, 1889.

NEWS ITEMS.

Tri-State Sanitary Convention.—Arrangements have been completed to hold a Tri-State Sanitary Convention at Wheeling, W. Va., February 27 and 28, 1890. Representatives will be present with papers and addresses from Pennsylvania, West Virginia, and Ohio. The object of the convention is to consider the question of floods and their results from a sanitary standpoint, and the best methods of managing the sanitary interests of a given community after such a calamity.

Owing to the mutual relations held by these three States, with reference to large rivers, and the numerous towns that are annually affected by floods, it has been thought wise to hold a convention for studying how best to manage the sanitary interests of cities and towns so affected.

Every person interested, directly or indirectly, in this important subject is earnestly requested to be present to assist in discussing the papers, and to add whatever information he can to the solution of these practical and most important questions, concerning as they do the health and lives of thousands of citizens of these three great commonwealths annually.

Reduced rates of transportation have been secured over all lines controlled by the Central Traffic Association in the three States named, on the certificate plan. Application has been made to the Trunk Line Association for like favor.

Stevens' Laboratory Prizes.—The following has been received from the Stevens' Laboratory, Maine:

From a desire to verify his own researches as to the causes of failing nutrition in aged organisms, the undersigned hereby offers three cash prizes of $175, $125, and $100 for the best three comparative demonstrations, by means of microscopical slides, of the blood capillaries in young and in aged tissues, canine, or human.

By young tissues (canine) are meant tissues from animals between the ages of one and three years.

By aged tissues (canine) are meant tissues from animals not less than twelve years of age.

By young tissues (human) are meant tissues from subjects between the ages of ten and twenty years.

By aged tissues (human) are meant tissues from subjects not less than sixty-five years of age.

While a preference will be given to demonstrations from human tissues, it will be possible for work in canine tissues to take the first, and, indeed, all of the prizes. But of two slides equally well done in all respects, one canine the other human, the latter will be given the preference. Canine tissues should be from large animals.

Twelve slides from young and twelve from aged tissues must be submitted by each competitor, together with a full description of the subjects, methods pursued, and every detail and circumstance which is likely to throw light upon, or account for any peculiarity. The slides are for comparison as to the condition of capillary circulation, the young with the old, and should be in numbered pairs, or groups from the same kind of tissue. The term tissue is used in a general sense—*e. g.*, pulmonary tissue, hepatic tissue, renal tissue, osseous tissue, muscular tissue, nerve tissue, alimentary tissue, etc.

No particular schedule of methods for injection, or staining, will be insisted upon, and no more definite directions or explanations will be given.

The slides, carefully packed and boxed, together with descriptive manuscript, can be sent by mail.

It is stipulated that the demonstrations which receive

[1] A note received February 8th from Dr. Trudeau states that no case of "la grippe" has yet occurred at the Sanitarium.—ED.

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the prizes shall become the property of the subscriber, for publication. All others will be returned, if desired.

No pseudonyms required. Accompany slides, in every case, with (real) name and address. Unless of known reputation as a biologist, a reference is respectfully solicited.

Reservation: no award will be made unless work of at least ordinary merit is submitted.

This offer is made on the first day of January, 1890, and will remain open until the twentieth day of August, 1890.

Slides and manuscript will be examined and receipted for as soon as received.

The prizes will be adjudged on the first day of October, 1890.

These nominal prizes are offered less in expectation of results from the money as an agent, than in the hope that the offer may furnish a *point d'appui* for really needed work. Besides professional observers and students, there are in the United States a large number of amateur microscopists of acute vision and undoubted talent, who are at present playing with microscopes as with toys, merely to see the curious or pretty things. The time has come to concentrate observation upon the one proper object of biology, viz., the renovation and prolongation of human life. Address C. A. Stevens' Laboratory, Norway Lake, Maine.

The License to Practise and Medical Testimony.—A recent decision in France states a general point of law affecting the medical profession in regard to its duties to the State, where a license to practise is issued. To the question, May a physician refuse to aid a coroner or other public official? the French decision says that the physician is in duty bound to respond to the summons of all judicial tribunals for the investigation of crime. No person may practise medicine or surgery save under authority of the law which prescribes what shall be his qualifications. This law, by virtue of which alone he has his legal status and existence, declares certain functions which none but the physician shall perform. From these legal premises the inference is inevitable that the law must look to the physician for the performance of those functions when a medico-legal investigation is required, as the physician is licensed for a public duty as well as for a private vocation. In other countries and states, where a definite license to practise is not granted, some other point of law must be found for the coercion of expert medical testimony, or for the creation of a special class of medico-legal experts.

Medical Lake, in the State of Washington.—Medical Lake, near the city of Spokane Falls, Washington, is a body of water to which many Western people are resorting to bathe, on account of its alleged efficacy in rheumatism and skin diseases. One of its properties is that it forms a lather when violently agitated or when rubbed on the skin. No fish or other varieties of life are found in its waters, and its appearance is muddy and repulsive. A town is springing up near the borders of the lake, to which excursion trains are to be run during the summer season.

Adulterations with Terra Alba.—The clay-eaters of the North differ from those of the South in the fact that they do not know that they are taking terra alba, and that it comes to them variously flavored with wintergreen, peppermint, etc. It is asserted by the *National Druggist*, as the result of a special investigation in connection with a lawsuit, that lozenges are made in enormous quantities of little else but white clay. The clay is compressed in moulds, and bound together by a little gum or gelatin, and immersed for a few moments in a syrupy bath containing the required flavor. This makes a very cheap form of confection which is largely consumed by children. The adulteration or substitution is also carried on to some extent in the manufacture of caramels; but in the case of the cheap lozenges the proportion of clay used is the highest possible consistent with their maintenance of shape. The Portland Board of Trade *Journal* has stated that there is an annual importation of terra alba amounting to 6000 tons, and that the only considerable use made of it is in the adulteration of the cheaper grades of candy.

The New York Charities in 1889.—The Annual Report of the New York State Board of Charities shows the reported amount of gratuitous medical and surgical relief by hospitals and dispensaries to have been 525,000 patients, of which 26,000 were treated at their homes, at an expenditure of $670,000. The estimated number of insane in the State was about 20,000, or 3.33 per thousand, on the basis of 6,000,000 as the population of the State. The report contains a protest against the erection by the State of any more buildings for the concentration of the insane, saying that the day of huge asylums has gone by, and that it is an extravagant misuse of funds to construct retreats and hospitals which cost $2500 per capita for shelter alone. It adds the statement that the weight of opinion among eminent alienists is adverse to the herding together of large numbers of insane persons. The entire receipts of the year for charitable and correctional purposes were $16,000,000, and the expenditures were $14,800,000; the total number of inmates of charitable and reformatory institutions was 67,780. The invested values of all institutions are over $57,000,000, of which $38,000,000 belong to incorporated benevolent associations.

A Hospital at Atlanta.—The citizens of Atlanta have determined to build a hospital as the most fitting memorial to the late Henry W. Grady, the favorite statesman of Georgia. It will, when built, bear the name of the Henry W. Grady Hospital.

Vacancies in the U. S. Navy.—In one of the circulars drawn up to explain a Navy reorganization bill before the Senate, an argument is based upon a comparison of the surgeons of the Army and Navy. In the Army there are always a number ot applications for each vacancy; in the Navy there are several vacancies and no successful applicants. Last summer Secretary Tracy convened an Examining Board at the Navy Yard at Brooklyn, for the filling of nine vacancies among the naval assistant surgeons. Until a recent date no satisfactory candidates had been secured. A few candidates presented themselves, but could not stand the physical or other examinations. A Board has also been in session a longer period at San Francisco, by means of which one or two surgical vacancies have been filled. From this and

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similar indications, it must be inferred that the young medical men who desire to secure a governmental surgeoncy are attracted to the Army in preference to the Navy; and it seems desirable that by new legislation the allurements of the latter service shall be enhanced by better rank, or better pay, or by both.

The Alvarenga Prize.—The College of Physicians of Philadelphia will award the Alvarenga Prize, consisting of one year's income of the bequest, to the author of the best memorial or unpublished work on any branch of medicine, the College reserving to itself the right to reject all essays not considered worthy of the prize, and that they will be received by the Secretary until June 1, 1890.

The Profession in France.—The number of practising physicians in France has been, of late years, steadily on the decrease. In that country there are, in accordance with the law of March 10, 1803 (19 Ventose, year XI.), two kinds of physicians: the doctor, and the health-officer—officier de santé—the latter corresponding to the English apothecary. The doctor, who, after a long course of study, has passed a rigid examination, has the right to practise in all the branches of his profession and in all parts of the country, whereas the officier de santé cannot practise outside of the department in which he has received his license, and is decidedly restricted in the exercise of his profession, being debarred, for example, from performing a major operation, unless in the presence and under the control of a doctor. It has been proposed by one of the Deputies, M. Chevandier, a physician, to abolish the officier de santé on the facetious ground that as no one is half-sick—demi-malade—there is no occasion for a half-doctor—demi-médecin. The proposition has called out a decided opposition from one of the French newspapers, which calls attention to the decrease in the number of practising physicians above mentioned, this decrease affecting both branches of the profession. For example, there are in France, at the present time, 29,795 communes destitute of physicians! The diminution is most marked in the case of the inferior branch of the profession, which numbered 7500 in 1847 and 3000 in 1889. In the article referred to, no attempt is made to account for a state of affairs which seems most anomalous to those whose country enjoys or suffers from an *embarras de richesse* so far as medical men are concerned.

The Indian Medical Journal.—By the death of Surgeon Charles Washington Deakin, of the Bengal Army, the *Indian Medical Journal* loses its editor and publisher, and it is said that the journal itself comes to an abrupt conclusion. Dr. Deakin died of enteric fever, in the Punjab, November 17, 1889, aged forty years. Although he had been less than ten years in the medical service, he left a brilliant record for surgical skill in several of the provinces of India.

Co-operation in Medicine.—A bill has been introduced into the New York Legislature, incorporating the Co-operative Medical Association of Brooklyn, with a capital of $1200. Its object will be to supply cheap attendance by means of coöperative physicians of a like grade. It is designed to meet the needs of the poorer class of patients who do not wish to resort to institutions of charity.

Examinations for Appointment in the Medical Corps of the U. S. Army,—An Army Medical Board will be in session in New York City, N. Y., from May 1 to 31, 1890, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application for the necessary invitation to the Secretary of War, before April 1, 1890, stating the place of birth, place and State of permanent residence, and enclosing certificates based on personal knowledge from at least two physicians of repute, as to professional standing, American citizenship, character and moral habits; also, statement of service in hospital from the authorities thereof is desirable. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a *regular medical college*, as evidence of which his diploma must be submitted to the Board.

Further information regarding the examinations and their nature may be obtained by addressing the Surgeon General, U. S. Army, Washington, D. C.

The pay of a first lieutenant of cavalry, or of a medical officer during the first five years of his service is $1600 per annum, or $133.33 per month. At the expiration of his five years of service he becomes, by virtue of that fact, a captain, and his pay is that of a captain of cavalry, $2000 per year, increased by ten per cent. for his years of service, viz., $2200 annually, or $183.33 monthly. At the end of his tenth year of service this rate of pay is increased by the service-addition to $2400 annually, or $200 per month, and after five years more the service-addition makes his pay $2600 aunually, or $216.67 per month. If he continue in the rank of captain, at the end of twenty years of service his monthly pay becomes $233.33; but about this time promotion to a majority is usually obtained, and a major's annual pay of $2500, with forty per cent. added, makes the monthly pay of the major and surgeon $291.67. Subsequent promotion, investing the individual with the rank of lieutenant-colonel, colonel, and brigadier-general, augments the monthly pay respectively to $333.33, $375.00 and $458.33.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING FEBRUARY 8, 1890.

JONES, W. H., *Surgeon.*—Ordered to the U. S. S. "Swatara."

HUDSON, A., *Medical Director.*—Died, February 7th, at Mare Island Hospital, California.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked. Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVI. SATURDAY, FEBRUARY 22, 1890. No 8.

ORIGINAL LECTURES.

REMOVAL OF AN ANOMALOUS ABDOMINAL TUMOR.

A Clinical Lecture delivered at the University Hospital.

BY WILLIAM GOODELL, M.D.,
PROFESSOR OF GYNECOLOGY.

GENTLEMEN: The woman whom I show you this morning is thirty-four years old. She has a very large abdominal tumor, complicated with exhausting menorrhagia, but she does not suffer as much as her appearance and the size of the tumor would indicate. The tumor has been present for seventeen years; but it has increased much more rapidly and given much more trouble during the past year, so that she has now come here to see if it can be removed.

Before she was etherized, I explained to her that I could not be able fully to make up my mind as to what I should finally do, until I had made an exploratory incision. She was perfectly willing for me to do exactly as I thought best, so I have had her etherized, and will make an incision to see whether the tumor, after being tapped, can be removed. If it cannot, this exploratory incision will be closed, and the woman will have run comparatively little danger.

Upon making a digital examination some days ago, I found the womb wholly free from any attachments to the tumor, yet the cyst has adhesions which keep it firmly fixed. I now divide the abdominal wall, and upon coming to the tumor it looks like a malignant ovarian cyst, but I shall not stop to decide this point; besides, the microscope will be necessary before a final diagnosis can be made. This large piece of omentum which lies so formidably before me, presents a double adhesion to the tumor and to the abdominal wall, and, as it is important to cause as little bleeding as possible, I tie the whole piece of this omentum *en masse*, preparatory to tapping the cyst. While I am thus engaged—for it will take a few minutes—let me mention that the woman upon whom I performed a very difficult oöphorectomy before you last Wednesday is doing exceedingly well. She has not had a single bad symptom.

This tumor looks malignant, wonderfully malignant, and yet it may not be so, for appearances in abdominal tumors are often very deceptive. I do not wish to make this incision any larger than I can possibly help, so I diminish the size of the tumor by drawing off its contents. The contents, however, are not fluid, but a dark-red or grayish-black, pultaceous mass. This appearance does not lessen my fears regarding the malignancy of the cyst. In the wound I shall have to leave a drainage-tube, on account of the character of the tumor and of its adhesions, which are mostly omental and parietal. The tumor cannot be lessened in size, so I shall have to enlarge the incision; and, having now done this, I lift the tumor out before you. Its walls are very thick, the tumor seeming almost solid, and its weight, without the little fluid that escaped, is probably about fifteen pounds. I have to tie a number of omental veins, which run like earth-worms into the tumor. Some bunches of them I tie *en masse*, and others singly.

This is the first time in my experience that a tumor like this one has lasted so long as seventeen years. It does not look like an ovarian tumor. I transfix the pedicle, tie it with the "Staffordshire knot," and remove the tumor. It is *not* ovarian, for here are both ovaries and tubes, perfectly healthy in every respect, and the pedicle of our tumor comes off from the broad ligament close to the left ovary. This is the most remarkable tumor that I have ever met with, and is, I fear, a malignant dermoid. But I have never before met with a dermoid cyst in the pelvic cavity which was not ovarian.

I now go to work to cleanse the abdominal cavity, and find that there is some vessel bleeding. As it comes from the torn surface of the omentum, I do not hesitate to tie the whole, and to cut off a large piece of it.

I now remove the sponges, cleanse them, and put them back. I again take a look at the ovaries, and find that they are perfectly healthy, which makes matters look better than if they also had been diseased. I come across some other pieces of omentum, and I do not hesitate to remove them if they are bleeding, or tattered and torn. This looks a little rough, but I am confident that it is the right thing to do. Moreover, you may ask, in connection with this: "Does it not increase the risk of sepsis or peritonitis to use so many ligatures?" I answer, Yes; they must do so to some extent, but less than the bleeding for which they were used. I have put in as many as sixty, apparently without any evil results, so that I do not think that they add much to the danger. There has been comparatively very little loss of blood here, except what was unavoidable from the congested state of the divided parts. I should have expected more hæmorrhage and menorrhagia from such a large and congested womb, though sometimes it happens that such is not the case. When I first examined this patient, had it not been for my previous experience in these matters, I should have concluded that it was a malignant tumor of the left ovary; but, as it had already lasted seventeen years, I was more inclined to believe it to be a pedunculated fibroid of the uterus.

Before putting in the sutures, I shall excise the navel; both because its tissue is thin and forms a poor cicatrix, and because it is a favorable seat for septic germs. When these sutures are *in situ*, I thoroughly irrigate the peritoneal cavity with warm water, and with my hands I paddle about the bowels, and wash out this cavity and Douglas's pouch, pouring in jugful after jugful until the water comes back clean. I know that this looks to you rough, and I would not have dared do it ten years ago.

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But experience has taught me, and others, that it is not what goes into the peritoneal cavity, but what is left there to disintegrate and to cause sepsis, that is really dangerous.

While I am engaged in this irrigation, I shall take the opportunity of telling you that all the patients upon whom I have so far operated before you this session, have done well, except the woman who had, as I then told you, syphilitic ozæna. Her ovaries were removed, and she died in three days, from heart failure. I attribute her death to the fact that she had been an opium-eater, which, unfortunately, I did not know until after her death, and, possibly, the too sudden withdrawal of so powerful a customary stimulant from her at the time of such a dangerous condition, was too great a tax upon the system.

The instruments and sponges being now counted, the sutures are tied, and the wound closed, after being sure that all the water that I have poured in has come out again.

This corkscrew among my instruments—a suspicious object for a gynecological teacher to have—needs some explanation. I brought it with me to-day, thinking that I might have to use it in taking out the supposed fibroid tumor. By screwing it into a solid fibroid, we get an excellent hold which takes no room.

As my hour is up, I shall remove the woman to my private room, and apply the usual antiseptic dressings.

[At his Clinic two weeks later, Dr. Goodell informed the class that this woman's temperature had not been over 100° since the operation, and that she was then doing well in every respect.]

ORIGINAL ARTICLES.

THE CAUSE OF DEATH FROM CHLOROFORM.

BY H. C. WOOD, M.D.,
PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS IN THE UNIVERSITY OF PENNSYLVANIA,
AND
H. A. HARE, M.D.,
DEMONSTRATOR OF THERAPEUTICS.

IN the *Indian Medical Gazette* for February, 1889, it is stated that a Commission composed of Dr. Hehir, Mr. Kelly, and Mr. Chamarette, assisted by the students at the Hyderabad Medical School, have made a series of experiments upon 128 full-grown pariah dogs, to ascertain the method in which chloroform causes death. It is further affirmed that the investigators varied the doses and the method of administering the chloroform in every way, and tested the value of artificial respiration by reviving the dogs over and over again, after breathing had stopped, and while the heart was still beating, and that they found that no matter in what way the næsthetic was given the heart became dangerously affected only when the breathing had ceased.

We have not had the opportunity of seeing the original report of this Commission, but learn from current medical journals that under the auspices of the Nizam of Hyderabad, Dr. Lauder Brunton, of London, has gone to investigate the matter. It is also stated in the *Lancet* that cablegrams have been received from Dr. Brunton affirming that the experiments of the Commission have been verified and their conclusions justified, and that as many as 450 animals have been used in the study of the question.

The surprising statements which have been made in the Indian journals and in the London *Lancet*, with the practical deductions which *apparently* follow upon them, seem to us of so great import as to demand the putting upon record of our own experience.

We believe that physiologists in general hold the opinion that when chloroform is given to the lower animals in a very dilute form, and gradually pushed, it causes by its action upon the nerve centres a paralytic relaxation of the muscles and at last death by paralysis of the respiratory centres; but that when it is administered freely in concentrated vapor by inhalation, or when it is injected in sufficient amount into the jugular vein, it kills by a paralytic arrest of the heart, the viscus stopping suddenly in its beat, and being found after death relaxed and incapable of reacting to stimuli. It has generally been believed that the danger from cardiac arrest by chloroform increases in direct ratio with the rapidity of administration; but that in animals, as well as in man, cardiac arrest sometimes occurs almost at once on the inhalation of the anæsthetic in small amount; or, in other words, that comparatively small amounts of chloroform have at times caused death by syncope, through direct action upon the heart. This we believe has been the teaching of all the instructors, both clinical and physiological, in the Medical Department of the University of Pennsylvania, and we desire to reiterate, as the result of our past experiences, that chloroform does, in the ordinary American dog, sometimes kill by paralyzing the heart, such paralysis accompanying or preceding, according to our past experiments, the arrest of the respiration.

It has been the custom of one of the authors of this paper, in his lectures before the University class, to demonstrate by means of the respiratory tambour, the mercurial manometer, and the kymographion, a continuation of respiratory movements after cardiac arrest through chloroform. Further than this, we have at various times in the Laboratory of Experimental Therapeutics, at the University, taken tracings proving the same facts.

Moreover, on experimenting with other drugs in the laboratory, the point at issue has been determined, because we almost invariably kill the dog which has escaped the drug being studied, with chloroform, whilst its artery is still attached to the kymographion, and the needle is still registering the play of the blood. We have sometimes given the drug intravenously, but in many cases we have administered it by inhalation of the concentrated vapor, and we have often noticed that death has been produced by primary cardiac arrest.

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When chloroform is injected into the jugular vein it is carried first in its concentrated form to the right side of the heart, and when it is absorbed through the lungs it is carried directly to the left side of the heart. In either method of administration the anæsthetic reaches the heart in a concentrated form before it is scattered in the circulation and gets to the respiratory centres. This may have connection with the frequent early occurrence of cardiac arrest during chloroformization in the human subject, but we desire especially to emphasize the point, that in either method of administration the heart is first reached, and that in our experience there is no essential difference in the action of chloroform, whether it is given by inhalation or whether it is injected into the jugular vein.

As we use between us, in the laboratory of the University, many dogs yearly, a very large proportion of which are finally killed by chloroform, we may be excused for our past positive assertions that chloroform is a cardiac paralyzant and does kill dogs by a direct action upon the heart or its contained ganglia; especially since we have been strengthened in our opinion by the fact that Dr. Reichert, Professor of Physiology in the University, has reached results confirming our own, and has frequently demonstrated the same to the University classes.

The statements that have been recently made in the Indian journals and in the London *Lancet*, have led us to reëxamine the subject and to make a series of experiments upon it with the greatest care. We have, also, varied and extended these experiments in order to determine whether chloroform paralyzes the heart by a direct influence or by an indirect action through the vagus.

A number of our experiments have been made by injecting the chloroform into the jugular vein; in others it has been administered by the respiratory tract. In all cases accurate tracings have been made by means of the kymographion and the respiratory tambour.

The theory has from time to time found advocates that the vapors of chloroform may, by irritating the larynx and adjacent parts, cause arrest of the heart through a reflex inhibition. To test the possibility of this we have made a number of experiments. When the tracheal canula is tied tightly into the trachea some distance below the larynx, it is evident that the latter organ is isolated from the general respiratory tract, and that chloroform injected into it will exert only a local influence. In all the experiments which we have made in the way just indicated, the injection has been followed by an immediate and very pronounced primary fall of the pressure, followed, after a very brief interval, by a rise which usually reaches decidedly above the norm. As an example of one of these experiments, we give the following tracing.[1] (See page 192, Tracing 1.)

The primary fall of arterial pressure, which has just been spoken of, can scarcely be produced except by reflex inhibition of the heart or of the vaso-motor centres, whilst the secondary rise is probably the result of a reflex vaso-motor spasm. In order to throw light upon this question, we have made experiments by injecting chloroform into the larynx after division of the pneumogastric nerves, the trachea being ligated so as to prevent the entrance of the anæsthetic into the lungs. (See page 192, Tracing 2.)

In making practical application of the experiments just discussed, it must be noted that in no case have we succeeded in completely arresting the heart's action by injecting chloroform into the larynx, and as the chloroform was injected in liquid form, it is plain that the irritation was more intense than could be produced by the mere vapors of the anæsthetic however concentrated; therefore, while it must be considered that it is possible for a reflex inhibitory arrest of the heart to occur during the inhalation, such an accident is extremely improbable, and we consider it practically certain that a heart so arrested would, a few seconds later escaping from the inhibitory control, recommence its beat. It certainly has never been proven that chloroform can cause in the human subject permanent reflex inhibitory cardiac arrest, and as our experiments upon the dog have failed to cause such arrest, we consider it very improbable that inhibitory arrest is ever produced in man by chloroform.

The second series of our experiments were made to determine the way in which large amounts of chloroform, either thrown into the jugular vein or absorbed into the pulmonic capillaries, cause death.

We have found that it is possible for the heart and respiration to be practically simultaneously paralyzed by the anæsthetic. (See page 193, Tracing 3.)

On the other hand, the heart may be arrested during chloroformization, and the respiration continue, as is shown in the accompanying tracings. (See page 193, Tracing 4.)

We desire to call attention to the fact, that of the two tracings here inserted, one (Tracing No. 4) was made by injecting the chloroform into the jugular vein, whilst the other (Tracing No. 5) was obtained by the inhalation of chloroform. In the second experiment (inhalation) *breathing continued two minutes after the heart had ceased to act.* (See page 193, Tracing 5.)

The next series of experiments were made with

[1] The upper tracing represents the respirations as registered by a tambour; the second one the pulse waves, and the third the abscissa line and second marks.

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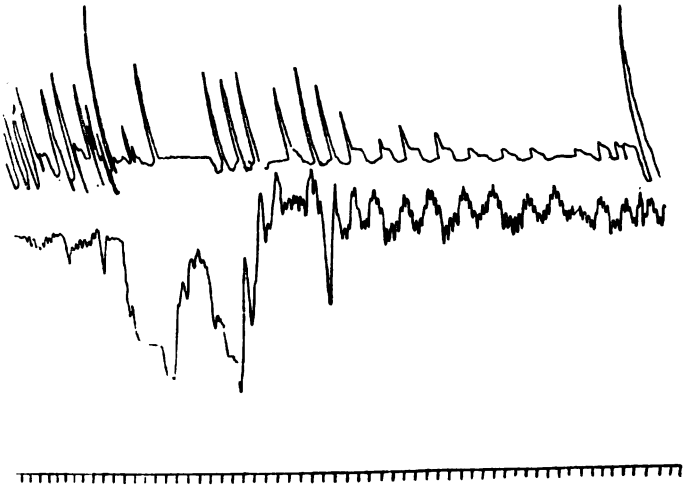
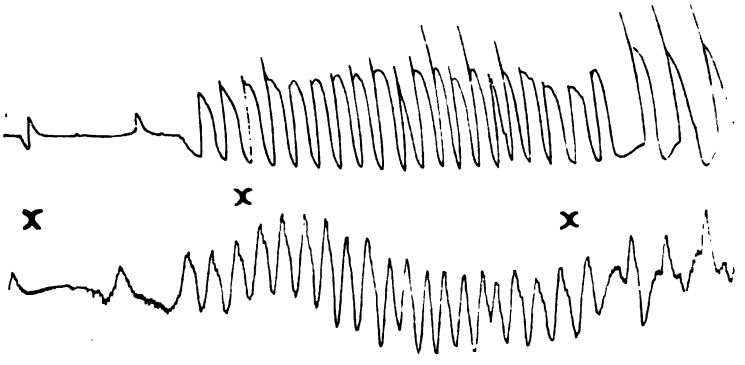
TRACING NO. 1.

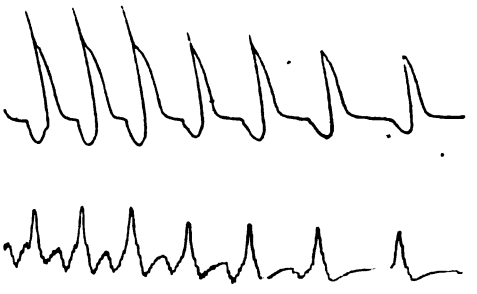


TRACING NO. 2.



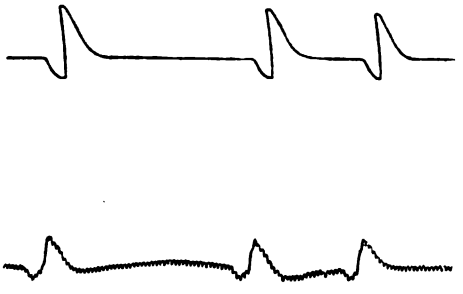
Vagi cut at first x mark; chloroform injected into larynx from x second to third x marks.

NO. 2a.



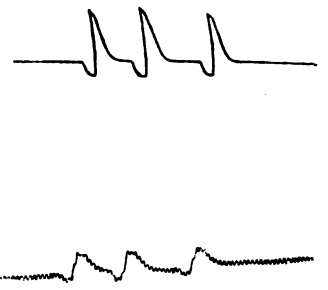
Same continued; no break in time.

NO. 2b.



1 minute later.

NO. 2c.



30 seconds later.

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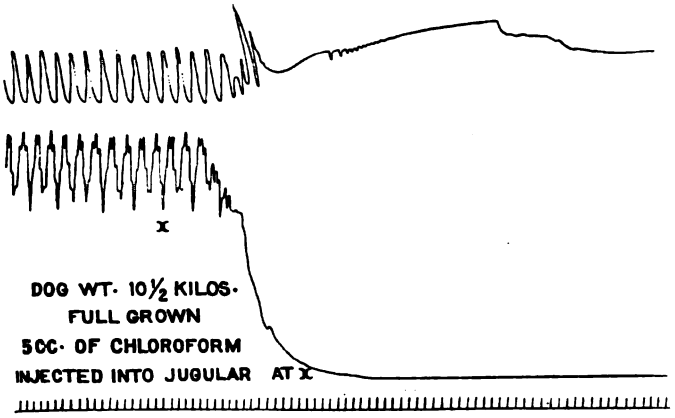
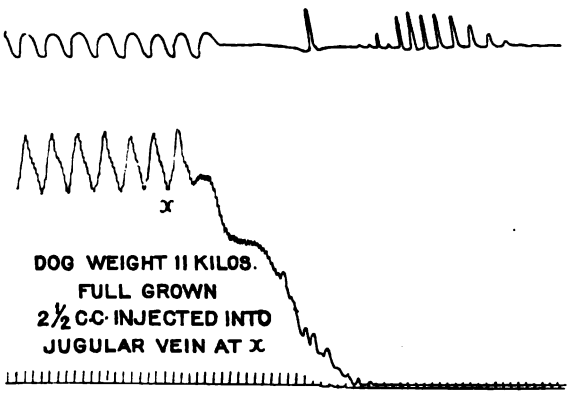
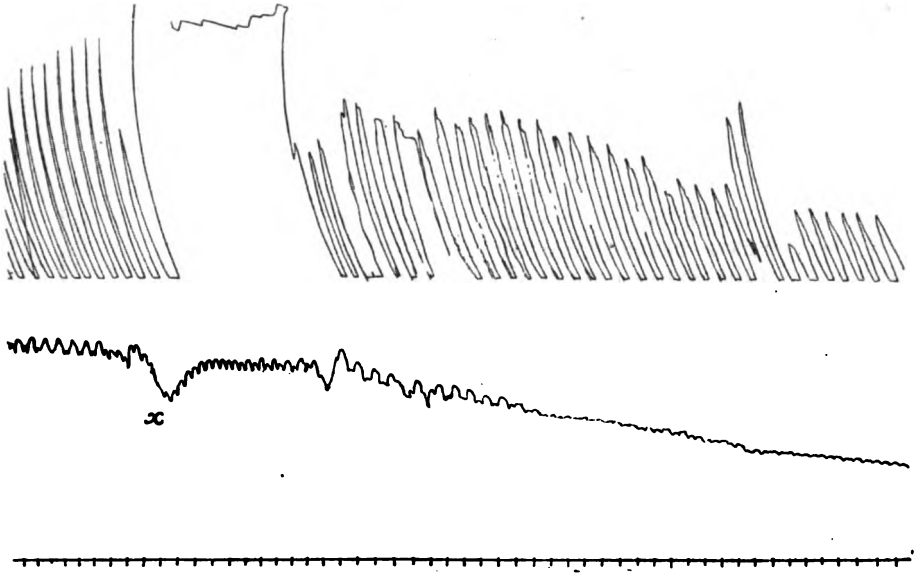
TRACING NO. 3.



TRACING NO. 4.

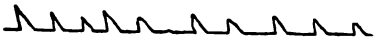


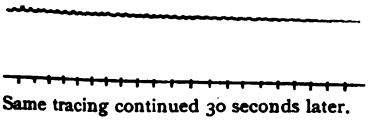
TRACING NO. 5.



Chloroform inhaled at x.

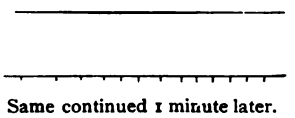
NO. 5*a*.





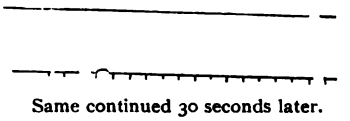
Same tracing continued 30 seconds later.

NO. 5*b*.



Same continued 1 minute later.

NO. 5*c*.



Same continued 30 seconds later.

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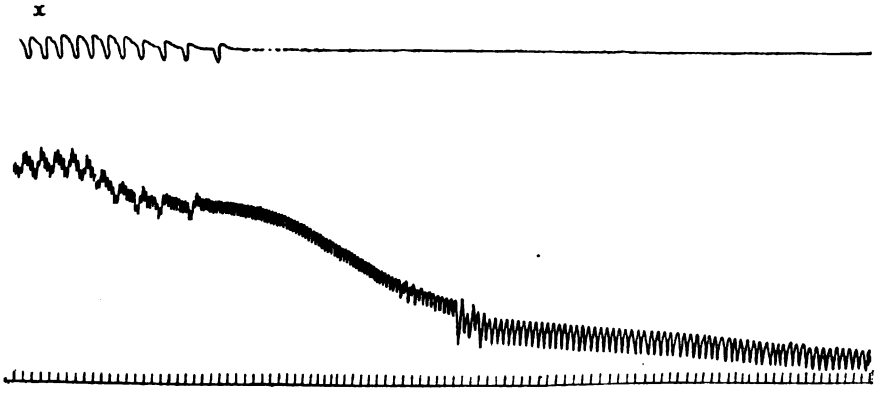
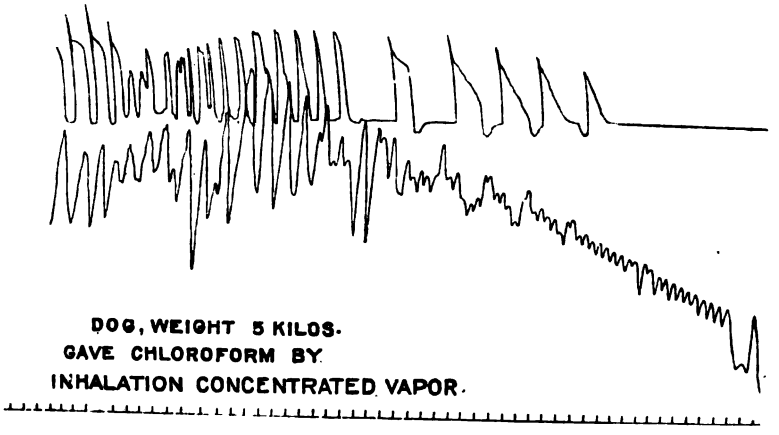
TRACING NO. 6.



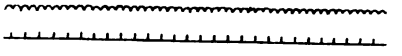
TRACING NO. 7.



No. 7a.

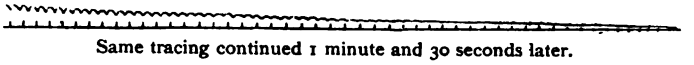
No. 7b.

Same tracing continued, no break in time.



Same tracing continued 30 seconds later.

No. 7c.



Same tracing continued 1 minute and 30 seconds later.

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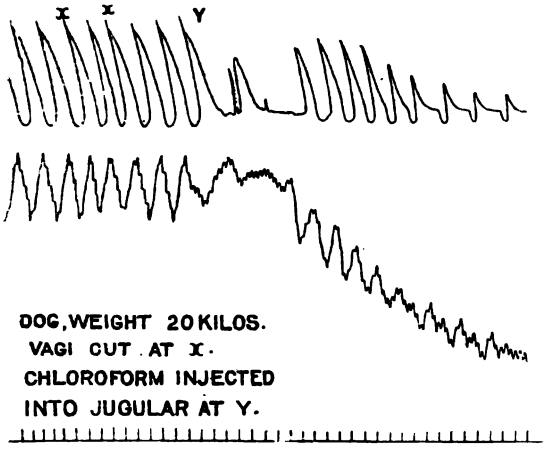
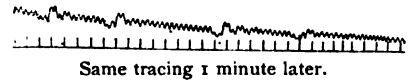
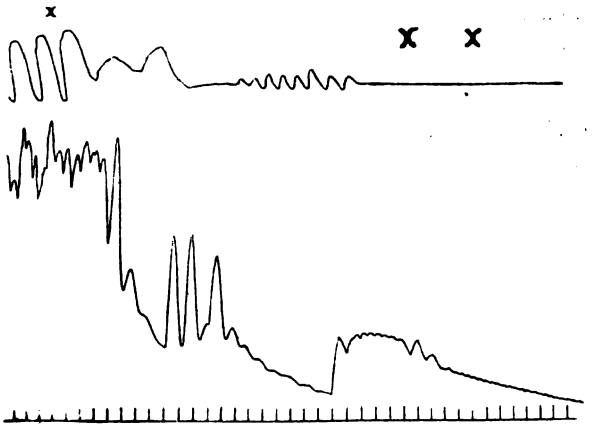
TRACING NO. 8.





Same tracing 1 minute later.

TRACING NO. 9.



Vagi cut at x x, but did not start heart beating again.

small doses of chloroform. In a number of these cases the respiration ceased long before the heart's action, as is shown in the appended tracings, in which the heart continued to beat two minutes after the cessation of respiration. (See page 194, Tracings 6 and 7.)

The final series of experiments we made to determine whether chloroform arrests the heart by indirectly affecting the vagus or by a direct action upon it. In one experiment (Tracing No. 8) the vagi were cut before, in the other (Tracing No. 9) after the exhibition of the chloroform. It is evident that the vagal section has little or no influence upon the cardiac action of chloroform, which, therefore, acts directly upon the heart and vaso-motor system. (See Tracings 8 and 9.)

The experiments which we have given show that chloroform acts as a powerful depressant poison upon both respiration and circulation, that sometimes the influence is most felt at the heart, and death results from cardiac arrest; that in other cases the drug paralyzes primarily the respiratory centres, whilst in other instances it seems to act with equal force upon both medulla and heart. So far as practical medicine is concerned, it makes little difference whether the heart stops just before or just after respiration; so that those cases, in which cardiac and respiratory arrest are almost simultaneous, are, for the purposes of the clinician, the same as those in which heart-arrest precedes respiratory paralysis. Finally, the general results of our new experiments also coincide with our previous experience in the laboratory, and with what we believe to be the general belief of physiologists—that cardiac arrest is specially prone to occur when chloroform is administered rapidly and in a concentrated form.

The present series of experiments which we have made with chloroform are so concordant in their results with those previously obtained by other experimenters and by ourselves, that it seems to us that their results cannot be gainsaid. Therefore if a final statement should be made by Dr. Lauder Brunton and his India coadjutors that the dogs of India are killed by chloroform solely by the action upon the respiratory centre, the conclusion must be drawn that the pariah dogs of India are affected by chloroform differently from those of Europe and America. This to us seems the best explanation of the curious results obtained in India. It is possible that the climatic influence of that country may make the respiratory centres abnormally sensitive to chloroform. That the thought of the different constitutions of animals in different climates is not absurd, is shown by the fact that, some years ago—after one of us had stated before the Physiological Section of the International Medical Congress, at London, that if certain asserted results were obtained upon European dogs, said dogs must differ from those of America, and had been met with a smile of incredulity—Dr. Brown-Séquard rose and stated that he had experimented upon hundreds of dogs on both continents, and that there was a distinct difference between the animals, the vascular system of the European dogs being much more developed and operations upon them being, therefore, much more bloody than was the case with the Amer-

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ican dog. Hashish causes the East Indian to run amuck and commit crime but fails so to affect the European. Whatever explanation we may accept of the different results which have been reached, we very strongly urge the consideration that these results show that the action of chloroform upon the human system is not to be estimated solely by any influence which it may have on the dogs of India. Indeed, it is possible that there may be the same difference between man in hot and cold climates as there appears to be in dogs in hot and cold climates; but we do not know of any statistics which will throw light upon such a supposition. A fact to be remembered is that though 450 pariah dogs in India have died of respiratory failure, an equal number in America have died of cardiac arrest, whilst the records of clinical medicine show that death in the human being from chloroform usually takes place either by primary arrest of the heart, or by a simultaneous arrest of the heart and the respiration, while in etherization the respiration usually ceases distinctly before the heart's beat. We do not propose in the present paper to reiterate the statistics which may be found in the text-books and recent treatises on anæsthetics, but we do desire to say emphatically that we believe the roll of deaths from chloroform would be very much larger if all the cases were reported, and that the present inequality between the anæsthetics, ether and chloroform, would be much more pronounced if an absolutely clear record could be obtained. One of us has seen, in a Philadelphia hospital, death produced by chloroform through cardiac arrest. The other has personal cognizance of two cases; but none of these instances have been reported. The surgeon who uses ether knows that he will receive no blame if a death occurs from it, and also that he has a rare case to put on record, which will give his own name a permanent place in anæsthetic literature, and consequently he naturally hastens to publish his unfortunate result; whereas the surgeon who uses chloroform knows that if death occurs from the anæsthetic, a very large proportion of the profession will condemn him either in public or secret for the use of this drug. Moreover, deaths from chloroform are only too common, so that the surgeon has nothing to gain and much to lose by publication of a chloroform death, and if possessed of the average human nature, holds his peace.

After the present paper had been sent for publication, the issue of the London *Lancet* for January 18, 1890, came to hand, and we have carefully read the report of the Hyderabad Commission. The great respect and friendship which we have for some of the members of this commission—make us loath to differ from them, but the issue between us is not simply a scientific matter. which would allow of silence, but is of such immense practical importance, involving, as it does, human life, that we feel it a duty to speak.

In the first place, we fear that the Commission's statement that their object is "to *test* the suitability and safety of chloroform as an anæsthetic," will mislead the minds of readers as to the proper scope of experiments upon animals in regard to therapeutic questions. We believe that no one will accuse us of attempting to diminish the importance of such experimentation, but we insist that the only proper objects of such experiments are to lead the way to clinical studies, and to explain clinical facts. A well-established clinical fact cannot be disproved by any amount of experiments upon animals.

We have given elaterium to dogs until it has caused death, but it has not purged. Suppose that every dog in India had had administered to it elaterium, without the production of purgation, would that prove that elaterium does not purge man? We believe that it is proven by clinical experience that, occasionally, in man chloroform does suddenly, without warning, arrest the heart's action. It seems to us scarcely possible that such conclusions as clinical reports, appear to be too definite and positive upon this point to be contradicted by experimental studies. But we believe that in verity the results of experiments with chloroform upon the lower animals are in accord with those obtained in human medicine.

In any discussion with wide differences of opinion, it is a matter of importance to determine points of agreement as well as of disagreement, and the probability of the correctness of the facts agreed upon is very great. We notice, therefore, with pleasure, that the Commission state (paragraph 18, p. 155): "The theory which has hitherto been accepted is that the danger in chloroform administration consists in the slowing or stoppage of the heart by vagus inhibition. This is now shown to be absolutely incorrect." This is in accordance with our own experimental results and conclusions, and whilst we deprecate the extreme positiveness of assertion, we think it highly improbable that chloroform ever kills man by a reflex inhibition of the heart.

In paragraph 20, p. 155, the Commission further states:

"In experiment ninety-two, repeated injections of twenty minims of chloroform were made into the jugular vein, and their effect was not to paralyze the heart, but to produce anæsthesia and a gradual fall of blood pressure, exactly as if the chloroform had been inhaled." This statement agrees with what we have already asserted in this paper. Chloroform possesses its peculiar properties by virtue of its inherent nature, and the method of administration does not altogether dominate the effects of the drug, so that conclusions can be predicted upon experiments made by injection into the jugular vein as

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well as upon those in which the chloroform is administered by inhalation. The agreement of the Commission with ourselves seems, therefore, to cut off any objections to our method of experimentation, especially since in every instance we have tracings obtained by inhalation as well as by injection.

In any discussion it is very important that the essential point be closely adhered to, and not lost sight of in side issues. In the report of the Hyderabad Commission there is a great deal that is novel and of much scientific interest concerning the effects of strangling, of suffocation, of vagi-irritation, etc., upon a chloroformized animal. These are in themselves very valuable, but they are liable to obscure the one main issue—an issue which, fortunately, is tersely expressed by the Hyderabad Commission in a single line, when it says: "and, however concentrated the chloroform may be, it never causes sudden death from stoppage of the heart."

In considering this main issue, we desire, first, to call attention to the fact that the evidence of the Commission is negative, whilst our evidence is positive, and we believe it is a general law of evidence that negative testimony cannot stand against positive when the latter is trustworthy. The Commission in substance assert: We have made a large number of experiments upon Indian animals, without ever having seen the heart arrested by chloroform before the respiration—therefore, chloroform never causes death by syncope; or, to put it in another way, we have not seen a certain phenomenon, therefore that phenomenon never occurred. On the other hand, we state that we have seen this phenomenon repeatedly, and we offer in proof of our statement, not merely our own assertions, but tracings which have the same relation to physiology that the photograph has to the original transactions of life.

Further, our results in conclusion are in accord with those obtained by other observers since Glover, in 1842, first pointed out that the vapor of chloroform, when locally applied to the exposed heart, stopped its movements. The English Chloroform Commission—Go-selin, Anstie, Richardson, Ringer, and Vulpian—are among the names from whom the Hyderabad Commission appears to differ, and with whom we agree more or less closely.

Much as we differ from the Hyderabad Commission as to the conclusions which should be drawn from their experiments taken in conjunction with those of other investigators, we would dissent much more strongly from the language used by the *Lancet* itself, in its editorial of January 18th, where it says: "The practical outcome of the research would appear to be that deaths from chloroform are not inevitable. They are, therefore, preventible, and *by due care* in its administration *they may be with certainty avoided.*"

We desire most emphatically to protest against any such language being considered as justified by the work of the India Commission. If, with due care in administering chloroform, accidents may with certainty be avoided, they are, when they do occur, the result of ignorance or carelessness, and the coroner's jury, in a given case, could scarcely, under the rulings of the *Lancet*, fail to bring an accusation of manslaughter against the surgeon. We cannot help wondering if the editor of the *Lancet* appreciated the force of his own words.

According to the latest edition of Dr. Lawrence Turnbull's work on *Anæsthesia*, 375 deaths from chloroform have been recorded. If the unreported cases are borne in mind, it must be considered that at least 500 surgeons have had in their practice fatal accidents during chloroform anæsthesia; the actual number of those who have met with fatal results is probably far greater, and among these surgeons we note these names:

Professors Billroth, Dumreicher, and Jaeger, of Vienna; Sir J. Y. Simpson, Sir George H. B. McLeod, Mr. J. Farrant Fry, and Mr. Francis W. Clark, of England and Scotland; Drs. Hunter McGuire, J. H. Wellford, and Dr. Chancellor, of Virginia; Drs. W. A. Hammond, A. J. Parsons; and Professors W. W. Dawson, Kinloch, and Mussey.

Does the *Lancet* mean to charge that these accidents could have been avoided? That these men have been practically guilty of taking life through carelessness?

A NOTE ON THE EARLY DIAGNOSIS OF PERITONEAL ADHESIONS IN ABSCESS OF THE LIVER.

BY DANIEL B. D. BEAVER, M.D.,
SURGEON TO ST. JOSEPH'S HOSPITAL, READING, PA.

THE common opinion of the profession to-day is, that abscess in the liver should be evacuated as early as possible in its progress. Before the invention of the aspirator, the time fixed for surgical interference was that at which it was supposed firm inflammatory adhesion had taken place between the liver and mural peritoneum. The accepted indications of the presence of this adhesion were then, as now, subcutaneous œdema and swelling, fluctuation, and, later, inflammation of the skin. Since the introduction of the aspirator, it has become the rule to withdraw the pus with this instrument as soon as its presence has been discovered; and reports seem to show that, in a small number of cases, this early tapping has stopped suppuration and induced reparation.

Usually, however, the abscess cavity refills after aspiration, and the disease extends in one direction or another toward the surface of the liver. If it goes toward the abdominal wall, and we wait for

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œdema and fluctuation, or these with redness of the skin, to appear, it may extend simultaneously in other directions, and, discharging into one of the adjacent cavities, result in long suffering or death to the patient.

Careful observation, during a number of years, of those cases of peritonitis which I had an opportunity of watching through their whole course, has convinced me that adhesion of the liver and parietal peritoneum, of sufficient firmness to prevent the flow of pus into the peritoneal sac in the evacuation of hepatic abscess through the abdominal wall, can be recognized some days before the classic indications of it appear.

Peritonitis, when due to a local cause, begins at one point at the seat of the cause, and, like inflammation in other tissues, spreads by continuity with more or less rapidity. Indeed, it probably begins in this manner in all cases; but in septic and general inflammations the disease extends so rapidly that its progress cannot be noted by the physician. But when the disease is owing to a local disorder, like abscess of one of the abdominal organs, and extends from them to the parietal peritoneum, its progress can be noted from day to day, and the more acute the symptoms the better it can be done. Accompanying the first pains of peritonitis there is tenderness on pressure over the seat of pain, usually very extreme, but perhaps over an area so small that it may be covered with the end of a finger. As the swelling of the underlying organ increases, the area of contact between it and the abdominal wall extends, and the inflammation of the parietal peritoneum, being dependent upon contact of the opposing surfaces, spreads accordingly. The portion of the peritoneum which is first inflamed becomes adherent to the opposite surface first, and as soon as the adhesion is firm enough to prevent movement and friction, the extreme pain and tenderness over its extent, be it ever so small, disappear.

If the inflammation continues and extends after a point of adhesion has been formed, the area of tenderness will move with it; and if it spreads in all directions the tender area will become ring-shaped. As the inflammation advances, the ring becomes larger, all the time preserving the excessive sensitiveness to pressure which is characteristic of inflamed peritoneum, and the central area under which adhesions have formed, and which consequently has lost its tenderness, increases in size correspondingly.

These phenomena were well exhibited in the following case of hepatic abscess:

G. M., a strong, healthy, muscular lad, sixteen years old, a moulder, complained of ill-defined pain in the pit of his stomach for three weeks, but continued at work. Then, suddenly, the pain increased so much as to compel him to go to bed. The next day I saw him, and found him in a fever, and with pain and tenderness in the epigastrium. The pain and tenderness were confined to a spot one and a half inches in diameter, of which the centre laid midway between the xiphoid cartilage and umbilicus and just to the left of the middle line. The tenderness was so intense that the least pressure beyond simple touch was unbearable, and the least movement of the body aggravated the pain most excruciatingly.

Daily examination of the abdomen revealed no change until the ninth day of his illness, and then the only change was increased resistance to pressure under the area of tenderness. By the thirteenth day the area of tenderness had increased one-half inch in diameter, and the centre was distinctly less sore to the touch than the periphery. On the fifteenth day, after a slight tympanites had disappeared, the surface over a spot two and a half to three inches in diameter appeared slightly elevated, and was firmer under pressure than the surrounding parts, and decidedly more tender on the edge than in the centre. Next day, thinking that I recognized an indistinct sense of fluctuation near the centre of the tumor, I put in an aspirator-needle slowly to a depth of two and a half inches, but failed to get pus.

On the sixteenth day the visible and palpable tumor had increased to a diameter of three and a half inches. The tumor was now again punctured with the aspirator-needle three-quarters of an inch above the seat of the previous puncture, and pus was struck at a depth of one inch. About three ounces of pus were withdrawn, and the pain and general symptoms were much ameliorated. On the eighteenth day the tumor had regained the size it had reached before the withdrawal of the three ounces of pus, the pain had returned, and the pulse and temperature risen.

I then proposed to open the abscess through the abdominal wall, but my colleague disagreed, upon the ground that as there was neither subcutaneous œdema and swelling, nor redness of the skin, there was no evidence that adhesion had taken place between the liver and the parietal peritoneum. I then related to him my observation of the beginning and spread of the pain and tenderness before he saw the case; how I had at first found both affecting a small, disk-shaped area which gradually expanded in all directions; how, as this disk grew larger, its centre became painless, and how the painless area increased with the extension of the inflammation, until the latter was represented only by a ring of tender tissues. He would not be convinced that this peculiar appearance, extension and disappearance of the pain and tenderness indicated adhesion of the liver to the abdominal wall in the painless central disk. To produce more evidence of the presence of sufficient adhesion to permit free opening through the abdominal wall, I now passed an aspirator-needle into the abscess a quarter of an inch below the puncture of the former tapping, and found pus, as before, at a depth of one inch, and then passed

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the needle at a point the same distance above the old puncture with the same result.

This seemed to show, at least, that there was an abscess cavity not less than half an inch in vertical diameter, just one inch from the external surface of the abdomen, and that if there was adhesion in the middle of this line where the first tapping of pus had been made, against which there were no probabilities, it was just as likely that the adhesion extended the whole length of the cavity. It also showed that not much liver-tissue would have to be cut in making an incision into the abscess. A solution of cocaine was then injected into the upper and lower punctures, and a straight bistoury pushed one inch into the lower one and made to cut the distance of half an inch to the upper one, with very little pain to the patient. After the discharge of about seven ounces of bloody and badly smelling pus, the cavity was washed with a solution of bichloride of mercury, 1 to 4000, and a large rubber drainage-tube inserted for three inches, and covered with an antiseptic dressing. At the end of three weeks after the incision the boy was well and out of doors.

These observations may be of little interest to the consulting surgeon, who is usually called late in the course of this disease, but to the general practitioner they are of practical value, inasmuch as they, if carefully practised, enable him to fix the time when immovable adhesion between the liver and abdominal wall occurs, and hence to recognize the earliest time at which an incision can be safely made.

This method of opening an hepatic abscess before the abdominal parietes are involved possesses the disadvantage of seeming like a thrust of the knife into darkness; but if, as is presupposed, there is firm adhesion between the opposite peritoneal surfaces, it is just as simple and free from danger as the lancing of an external abscess. On the other hand, it possesses some advantages over the method of opening by dissection. It requires less skill on the part of the operator, less time, and a smaller incision; and it does not necessitate the use of ether, thus avoiding the danger of rupturing adhesions incident to the usual struggle in the early stage of etherization and the later retching and vomiting.

THE PREVENTION AND TREATMENT OF PUERPERAL FEVER.

BY EDWARD P. DAVIS, M.D.,
PROFESSOR OF OBSTETRICS AND DISEASES OF CHILDREN IN THE PHILADELPHIA POLYCLINIC; VISITING OBSTETRICIAN TO THE PHILADELPHIA HOSPITAL, ETC.

PUERPERAL fever is an infectious wound disease produced by living ferments; these ferments are formed outside the normal body, and are by some means carried into the body from without; hence, puerperal fever is contagious. Half a century ago this statement would have been denied by obstetricians; to-day the vast majority of opinion, based on the most thorough study of the question, accepts it as true.

From what sources are these living ferments derived? Generally from animal tissues in a condition of decomposition, rarely from decayed vegetable matter. The substances causing puerperal fever are most often brought into the body through some wounded surface at the time of labor; syphilitic disease of fœtus and mother, resulting in fœtal death and abortion and cancer, may produce ferments which may be absorbed at labor, causing puerperal fever.

Gonorrhœal poison introduced into the mother's body before labor may produce living ferments which may be absorbed through a wound produced at labor, causing puerperal fever. But in the woman who comes healthy to her labor, and has puerperal fever, the disease is the result of contagion, with which she is inoculated from without. The prevention of puerperal fever consists, then, in the prevention of syphilitic and gonorrhœal infection before labor; in destroying the poisonous products of such infections, and in shielding the healthy parturient from septic poison at and after labor.

The very practical question then arises, How shall this be done? In a case where pregnancy and syphilis exist, abortion should be prevented, if possible, by constitutional treatment. The vagina should be examined for local lesions, and all ulcerating surfaces should be treated by applications of iodine and carbolic acid (tincture of iodine, 1 part; carbolic acid, dissolved in glycerin, 4 parts). The vagina should be douched twice daily with bichloride of mercury, 1 : 3000, and one or two drachms of iodoform or powdered boric acid should be deposited within the vagina, after the douche, and allowed to remain there. When the vagina is healed, one vaginal douche of bichloride, 1 : 5000, may be taken daily until labor; the administration of constitutional remedies should be continued. When pregnancy is complicated by gonorrhœa, warm vaginal douches of bichloride of mercury 1 : 3000 may be taken until the acute stage be passed; the leucorrhœa following gonorrhœa should be persistently treated by mercurial douches 1 : 5000, or creolin 30 drops or 1 drachm to the pint of warm water, twice daily; iodoform or boracic acid should be used as stated.

In the case of the healthy parturient, it is of cardinal importance that the fingers of the practitioner, and any instruments or utensils which enter the vagina, should not only be clean but antisepticized. Theoretically, perfect cleanliness is all that is needed; practically, we must take the added precaution of antisepticizing hands, instruments, and all touching the patient. For the hands, bichloride of mercury 1 : 2000 or 3000 is most efficient and conve-

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nient. The hands should be scrubbed with soap and warm water, rinsed, and then scrubbed with the mercurial solution; the nails cut short, filed smooth, cleaned; rings are nuisances on the hands of surgeons and obstetricians; the cuff removed, shirt sleeve rolled up, and forearm cleansed. It is well to have a nail brush and bottle of bichloride tablets lying on the top of the articles in the obstetric bag, so that when haste is needed, a tablet may be thrown into a basin of water and the hands antisepticized at once. Rubber douche tubes and other rubber appliances may be antisepticized with bichloride solution, 1 : 1000. Metal instruments and articles may be treated by carbolic acid, 5 per cent., or creolin 1 drachm to 1 pint of water. Scalding or passing through alcohol flame is also efficient. Creolin is especially convenient because it makes a good emulsion at once with hot or cold water; carbolic acid may not dissolve properly.

When possible, the external genitals should be cleansed with soap and water and bichloride 1 : 4000. A vaginal douche of bichloride, 1 : 5000, is useful before labor. But the healthy woman, clad in clean clothing, lying upon clean bedding on a clean bed and in a clean room, is quite ready for labor, and it will be the fault of those who touch her if she has puerperal fever. While living ferments are sometimes conveyed by sewer gas, by exhalations from filth-spattered walls, and dirty hospitals, and by clothing and bedding, yet the most common manner of carrying the contagion is by hands and appliances. And dirty walls, whether roughly or smoothly finished, and dirty buildings may be so cleaned and disinfected as to be no excuse for an outbreak of puerperal fever.

Labor should, furthermore, be so conducted that the finger should enter the vagina as rarely as possible. If palpation and auscultation be practised early in labor, vaginal examinations need be few; the hand should be washed in bichloride before each examination. When the head comes upon the perineum the patient should lie on her left side, her buttocks brought to the edge of the bed, a pillow between her knees. The practitioner may conveniently sit beside the bed, facing her feet, having within reach a basin of bichloride solution, 1 : 2000, in which are bits of old clean linen or absorbent cotton. As labor progresses, the perineum should be cleansed with the bits of cotton or linen, which are then thrown into a receptacle beneath the bed. As the head emerges, the anus should be covered by cotton, and the right hand laid broadly and firmly on the perineum, the posterior commissure being received in the curve between the thumb and index finger.

In painful or precipitate labor, the left forearm may pass over the pubic joint and the head be held up beneath the pubes by the arched fingers of the left hand; when the patient threatens to expel the head suddenly, tearing the perineum, one hand may be slipped over the other, both covering the vulva, holding back the head. Cleanly practitioners keep their fingers out of the rectum, which is a sewer not concerned in normal labor. The fingers should not enter the vagina to deliver the head in normal labor, thus avoiding contagion.

The placenta should be delivered by expression, and thus entering the vagina be again avoided; one thorough vaginal douche, bichloride 1 : 5000, may be given when labor is complete; tears of the genital tract which need repair should be closed at once. Fissures and small tears may be dusted with acid salicylic 1 part, starch 5, or powdered boric acid. After instrumental delivery or version, and after the expulsion of a syphilitic or dead fœtus, vagina and uterus thould be thoroughly washed out with bichloride, 1 : 5000. From 30 to 60 grains of iodoform in suppositories may be left in the uterus in very complicated cases. A healthy woman needs but one douche after labor; the external genitals should be washed with bichloride, 1 : 5000, twice in twenty-four hours. When possible, the lochia should be received on clean old linen, and burned when removed. The following simple antiseptic napkin costs less than two cents each, if the materials are bought in quantities: a strip of picked oakum ten inches long, six wide, two thick; on each side of this two inches of cheap cotton batting, the whole enclosed in a strip of cheese cloth two feet long. This is soaked in bichloride 1 : 2000, and dried. On an average, six are used for each of the first three days; four daily afterward; they should be removed when soaked through, and burned.

Puerperal fever, practically, is of two kinds: one in which poison is directly absorbed by the uterine circulation at labor; the other, in which poison is absorbed through the lymphatics from the vagina. The latter is the most common; is marked by swelling, infiltration, ulceration of the genital tract, with absorption and pyæmia. Its symptoms are fever, pain in the abdomen, foul lochia, high pulse. It is to be treated by thorough examination of the vagina, touching ulcers with iodine and carbolic acid; by four vaginal injections in twenty-four hours, of bichloride 1 : 5000, or creolin 30 drops to the pint, after the douche, iodoform or boric acid to be freely sprinkled in the vagina. Abdominal pain is best treated by turpentine stupes, followed by dry heat. Intestinal elimination should be prompt and thorough; 5 grains of calomel with soda may be given at night and a saline in the morning, or concentrated saline solutions in small repeated doses. Food should be liquid, easily digested and abundant; alcohol may be freely given. Quinine, 5 grains three times daily,

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or sodium salicylate, 120 grains three times daily, is useful. Antipyrin in 5 grain doses repeated two or three times at night will relieve restlessness and pain. Large doses of antipyretic drugs and of opium are to be avoided.

Should the symptoms persist after such treatment for forty-eight hours, the uterine cavity must be disinfected. If the uterus is relaxed, the cervix torn, the os open, an ordinary douche tube may be attached to the fountain syringe, and after a vaginal douche a quart of creolin 1 drachm to the pint, carbolic acid 2 per cent., thymol 1 : 1000, boric acid saturated solution, alcohol and water 1 : 3, or bichloride 1 : 8000 or 10,000, at a temperature of 100° to 110° F., should be allowed to pass gently into the uterus, the return flow being carefully observed; the fountain syringe should be three feet above the patient's bed. If the os is not widely open, an intra-uterine catheter should be used, or a large vesical catheter, while the os be held partly open by dressing forceps. These injections may be made twice daily, vaginal douches continuing. If the lochia continue foul after intra-uterine douches, the use of a large bladed dull curette is indicated, to remove infected decidua accompanied by the douche; this should rarely be repeated if thoroughly done at first, and iodoform in suppositories may be placed in the uterus afterward. By these means the genital tract may be thoroughly disinfected, and after the faithful use of intra-uterine douches for a few days their continuance is of doubtful utility. Vaginal douches should continue, and the treatment be directed to the pyæmia or septicæmia from which the patient suffers.

Pyæmic abscesses, when external, should be opened, drained, and disinfected. For the constitutional debility and fever which accompany both septicæmia and pyæmia, alcohol should be pushed to the verge of intoxication. For fever, antipyretics should rarely be given; temperature should be reduced by sponging with cold or hot water, by packing in cold or hot wet sheets, occasionally by the graduated bath. A reduction of fever by these means will be accompanied by a return of appetite; milk, eggs, soups, beef-essence, scraped beef, with the best wines and brandies, should then be taken. The only antiseptic which can be safely used internally is alcohol, and that should be pushed; from one to two pints of brandy in twenty-four hours, with wine in abundance, has been given with good results. When vomiting occurs, cocaine may be used to advantage. For septic diarrhœa, bismuth salicylate may be freely given. The best brandy to be had in America is Naglee's California brandy; if this cannot be procured, old whiskey is more apt to be pure than so-called French brandies. Alcohol and water will occasionally be retained when no other form of alcohol can be taken. The continued administration of quinine, 5 grains three times daily, or sodium salicylate 10 grains three times daily, may be continued *if the stomach be not disturbed by them;* if this happens, they should at once be abandoned, and alcohol and food made the principal treatment. Puerperal peritonitis may be treated by incision, introducing a tube among the intestines, and flushing the abdomen with hot water (110° F.). Ice, applied to the abdomen or to the head, has been a useful adjuvant. Faithfully treated upon the principles stated, seventy per cent. of cases of puerperal fever have recovered in the practice of those who have most thoroughly studied the subject.

THE TREATMENT OF HYSTERICAL APHONIA, ASSOCIATED WITH HYPERTROPHIC RHINITIS, BY CAUTERIZATION OF THE TURBINATED BODIES.

BY W. E. CASSELBERRY, M.D.,
PROFESSOR OF THERAPEUTICS AND MATERIA MEDICA, AND OF LARYNGOLOGY AND RHINOLOGY IN THE CHICAGO MEDICAL COLLEGE; LARYNGOLOGIST TO THE SOUTH SIDE FREE DISPENSARY OF CHICAGO, ETC.

PATHOLOGICAL reflexes which have been described as emanating from the nose are so numerous and diverse that, unless one be intimately familiar with the possibilities, a sense of scepticism might arise. The term "reflex" is, doubtless, often misapplied, yet it has a definite significance; sneezing, for example, is a physiological reflex designed to rid the upper respiratory tract of irritating particles which may have gained access thereto. The sensory impression in the nose travels *via* the nasal branches of the ophthalmic division of the fifth nerve and the nasal branches of Meckel's ganglion in connection with the superior maxillary division of the fifth nerve to the medulla. It is there reflected to the respiratory, pneumogastric, glosso-pharyngeal, and other centres, whence efferent impulses result in the deep inspiration, the forced expiration, and the coincident spasm of the pharyngeal muscles termed a sneeze. With a violent sneeze is often combined the element of cough, in which case contraction of the laryngeal muscles is excited in the same manner by nasal irritation.

"Nasal cough," as a pathological reflex, has been established by John N. Mackenzie,[1] Wilhelm Hack,[2] and others.

Cough was instantaneously excited whenever I passed a cotton probang into the left middle meatus, in the case of a child who suffered from polypi of

[1] Nasal cough, etc., American Journal of the Medical Sciences, July, 1883. Cases of Reflex Cough due to Nasal Polypi, Transactions of the Medical and Chirurgical Faculty of Maryland, 1884

[2] Ueber eine Operative Radical Behandlung von Migräne Asthma, Heufieber, etc. Wiesbaden, verlag von J. F. Bergman, 1884.

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that nostril, and this phenomenon was repeated many times in the course of treatment. Otherwise cough was not one of the symptoms, and no cough could be excited by the same manipulation in the right nasal fossa, which was nearly normal. Evidently the polypi maintained a state of superexcitation in the surrounding area, to which only the additional irritation of the cotton was necessary to excite reflex cough.

The terms "neurosis" and "nervous habit" are also often of indefinite significance, yet the existence of a neurotic temperament is conceded by everyone. Neurotic individuals are more susceptible to some or all forms of nervous impressions. Had the child above mentioned been of more pronounced neurotic temperament, it is probable that the polypi alone would have sufficed to produce cough, as in Dr. Mackenzie's cases.

With another child suffering from atrophic rhinitis, the passage of a cotton probang into either middle meatus invariably provoked cough; and in still another patient affected with hypertrophic rhinitis and septal deformity, in whom cough was a prominent symptom, manipulation anywhere in the nose excited such paroxysms of cough as seriously to interfere with treatment.

From these observations it is apparent that the "sensitive areas" are not circumscribed, but cover in some degree all portions of the nasal fossa, the anterior parts being quite as sensitive in this respect as the posterior parts.

Spasm of the glottis may ensue by reflection of irritation from the naso-pharynx, as in a young woman who had suffered for years from typical attacks of laryngeal spasm, and in whom examination disclosed a mass of adenoid vegetations. Direct irritation of this hypertrophy accidentally made by a strong upward spray, and again purposely by means of a probe, resulted in attacks characterized by prolonged, shrill, whistling inspiration and cyanosis, the second one of which lasted for a minute—suggesting preparations for laryngotomy, and was so alarming that I willingly refrained from further experimentation in this direction. Removal of the adenoid hypertrophy—not quite complete because of the brevity of her stay in town—ameliorated the condition from several attacks daily to a mild one every week or two.

That the irritation of adenoid hypertrophy in the naso-pharynx may excite, reflexly, a much more widely distributed spasmodic state than that of the larynx alone was demonstrated by a child, sent me by Dr. E. J. Doering, who had suffered from violent and rapidly recurrent asthmatic seizures, which resisted change of climate and all forms of treatment until a mass of adenoid vegetations was removed. Only four comparatively mild attacks occurred during the following year, and these can be accounted for by remaining remnants of the adenoid growths, in connection with a disposition to "catch cold" and a susceptibility to bronchitis.

Nasal irritation acting reflexly in conjunction with weak and excitable nerve-centres, is further cited among the causes of migraine, supra-orbital neuralgia, otalgia, chorea, epilepsy, etc.; while, in turn, muscular action in the larynx may be excited reflexly by distant irritation elsewhere than in the nose, of which "aural cough," caused by irritation in the external auditory canal of the auricular branch of the pneumogastric nerve, is a familiar example.

I have cited these illustrations as a reminder of the established fact that nasal irritation is capable, under certain conditions, of exciting muscular action in the larynx. *It is now proposed to study circumstances from which it would seem that this rule can be worked the other way, and the correlation between the nerves of these organs utilized, therapeutically, to correct functional laryngeal paresis by artificial irritation applied to the nasal tissues.*

Sister C., a teacher in a Roman Catholic academy, suffering from "hysterical aphonia," was referred to me by Dr. W. E. Quine. She had had a previous attack two or three years before. Treatment then was of no avail, phonation having commenced finally, unassisted, as suddenly as it had disappeared. The last seizure commenced suddenly, was of some weeks' duration, and had resisted many forms of treatment. She was very anæmic and generally debilitated, but seemingly devoid of serious organic disease or pronounced hysterical manifestations. The inferior turbinate bodies were much hypertrophied, in consequence of which one or the other nostril was constantly occluded. Laryngoscopic examination disclosed that paretic state of the vocal cords which, in the absence of other cause, is commonly attributed to hysteria. The bands presented a relaxed, flabby aspect, and upon attempted phonation they would scarcely meet in the median line, then instantly separate, leaving an elliptical space or a slit between them.

The usual remedial measures—intra-laryngeal faradization, alkaline and astringent sprays, iron and strychnine internally—employed during three weeks, proved of no avail. Then, in view of possible association with the hypertrophic rhinitis, electro-cauterization of its inferior turbinals was commenced. During the two days following the first linear burn, about four centimetres in length and in depth to the bone, she spoke a few words aloud. After its second cauterization the voice returned permanently, increasing somewhat in strength as treatment progressed.

In another case, Mrs. G., aged forty years, aphonia supervened upon a severe "cold" six weeks before There were signs of infiltration in the right infro-clavicular region, but the bacillus tuberculosis was not discovered. Pulmonary pains, harassing cough, profuse expectoration, sore throat, and gastro-

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intestinal derangement had been of frequent occurrence for years. She was of a highly nervous temperament.

On attempted phonation, the cord from the anterior commissure to the vocal processes would meet, but again instantly separate, leaving, in this position, a narrow elliptical slit, while a triangular space always remained between the segments of the cord, posterior to the vocal processes. The paresis was associated with only slight congestion of the larynx. She had hypertrophic rhinitis, follicular pharyngitis, and chronic tonsillitis. Constitutional treatment, intra-laryngeal faradization, alkaline and astringent sprays, and cauterization of the enlarged pharyngeal follicles, during three weeks, failed to improve the voice. The enlarged turbinated bodies seemed to occasion no inconvenience, but I now subjected them to electro-cauterization, as in the previous case, and with precisely the same results. Within two days she spoke some words aloud, and after the second treatment she permanently regained her voice. Now, after fifteen weeks, the vocal bands still appear relaxed, and the triangular space, though less, is yet present, notwithstanding which she speaks in a fair tone of voice.

The muscles involved in each of these cases were chiefly the adductors, thyro-arytenoidei interni, crico-arytenoidei laterales, and the inter-arytenoideus, the latter especially in the case of Mrs. G., as was shown by the triangular space mentioned. These muscles are supplied by the recurrent laryngeal branch of the pneumogastric nerve, which also receives fibres from the spinal-accessory. The thyro-arytenoidei interni act at the same time as tensors, and, further, it is not improbable that the abductors, crico-arytenoidei postici, supplied by the same nerve, were sufficiently involved to affect their tensor function. Likewise the especial tensors—the crico-thyroidei, supplied by the superior laryngeal branch of the pneumogastric—were possibly involved.

Few cases described as "hysterical aphonia" belong strictly to that category. Gerhardt, cited by Sir Morell Mackenzie, thinks some of them belong to the class of "reflex paralyses," and I am informed that he has reported a case cured by cauterization of the inferior turbinated bodies. More often it is the simply anæmic and those debilitated by phthisis, independently of laryngeal tuberculosis, who suffer from functional aphonia. It follows inflammation and laryngeal rheumatism from "cold," in which case the congestion disappears, but the aphonia remains indefinitely.

The defect may lie in a perverted distribution, or in an inadequate supply of nerve-force to the parts, or there may exist a state of inherent muscular weakness requiring increased nerve-force for action, which, in debilitated subjects, is not forthcoming. Whichever it may be, if we can stimulate energetically and somewhat continuously the branches of the pneumogastric nerve which supply the larynx, it would seem possible to restore their flagging energies or to redirect the perverted nerve-force into its proper channels.

We have seen that the nerve-filaments of the nares are in intimate reflex communication with those of the larynx, and that spasmodic action in the normal larynx can be excited by pathological irritation in the nose and naso-pharynx. Why, then, may not the larynx, in a state of paresis, have its nervous supply reflexly energized to the normal standard by cautery irritation to the nerve filaments supplying the inferior turbinals of the nose?

The excitation passes to the medulla *via* the nasal nerve, a branch of the ophthalmic division of the fifth, which supplies the anterior end of the inferior turbinate body, and *via* the nasal branch of the anterior palatine which supplies the rest of the turbinal, descending from Meckel's ganglion which is connected by its sensory root with the superior maxillary division of the fifth nerve. Reaching the medulla, it is reflected to the pneumogastric and spinal accessory centres, to be transmitted thence to the laryngeal muscles. This is submitted as seemingly the most reasonable explanation of the results obtained in the cases cited.

What causal relationship, if any, existed between the hypertrophy of the inferior turbinate and the laryngeal paresis is not easy to determine. The hypothesis advanced by Woakes,[1] in explanation of paresis of the laryngeal adductors, and of the velum palati in association with ethmoiditis, that irritative impulses pass from the nose *via* the sympathetic system to the superior cervical ganglion, thence as vaso-dilator waves to the arterioles of the parts, occasioning paresis through vascular engorgement, is not tenable in these cases, because it does not explain the immediate improvement of the voice upon the additional irritation of the cautery to the turbinals.

Circumstances in each case preclude the supposition of action through mere mental impression; the intra-laryngeal faradization and cauterization of enlarged pharyngeal follicles being equally impressive and arousing in their nature, and, to the mind of a patient, more in harmony with the object in view than treatment directed to the nose. Nor would one anticipate the same results from cauterization at random elsewhere on the body, for it is demonstrated that a special reflex relationship exists between the sensory filaments of the nares and the motor nerves of the larynx; and, finally, with the physiological action of the remedy thus known, so to speak, one is assisted in distinguishing between the *propter hoc* and merely the *post hoc*.

70 MONROE STREET.

[1] Nasal Polypus, etc., in Relation to Ethmoiditis. American edition, p. 48.

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VALUE OF THE GENU-PECTORAL POSITION IN GYNECOLOGICAL TREATMENT.

BY J. N. MARTIN, M.D.,
OF ANN ARBOR, MICHIGAN.

I AM well aware that the genu-pectoral position is frequently mentioned, but I believe its full value is not generally appreciated. I have, for several months past, utilized this position much oftener than formerly, both in hospital and in private practice, and am convinced that in certain pelvic disorders it is of great value and will obviate the need for more dangerous procedures.

Among the indications for this position are posterior displacements, with or without adhesions, prolapse, enlargements of the uterus from any cause, and pelvic inflammations. In many cases of anterior displacements patients are materially relieved by it. If practised correctly, we simply call into use gravitation, or atmospheric pressure by loosening all the bands about the abdomen, in order that the abdominal viscera may drop down while the patient is in the position, thus forming a partial vacuum between the abdominal and pelvic viscera; and now, if the perineum is retracted, the atmospheric pressure through the vagina forces the uterus and appendages down toward the abdominal viscera. By the action of gravitation, blood-pressure is much diminished in the pelvis; in other words, the congestion is greatly relieved. If the uterus is displaced posteriorly, all pressure opposing replacement is removed, and, if there are no adhesions, it will, as a rule, return in a few minutes nearly or quite to its normal position, without the use of repositors or sounds; if it does not, after the patient has been in this position a few minutes, gentle pressure from behind will replace the uterus without pain to the patient. The patient should be required to repeat this several times daily, and after a few days she will be prepared for a pessary. If there are adhesions binding the uterus down, order douches of hot water daily until sensitiveness is diminished, then advise the knee-chest position several times a day, with or without deep respirations, *pro re nata*—the frequency and duration of the posture being governed by the amount of pain produced. Later, gentle pressure from behind may be added to the atmospheric pressure. This treatment has a marked resolvent effect upon the adhesions, and, when added to the usual treatment, materially hastens the recovery.

I have treated several bad cases of posterior adhesions during the past year, with most excellent results, and among them one who was advised by a prominent Chicago gynecologist to have the adhesions broken up through abdominal section. To-day she calls herself well.

Patients properly instructed can do much to aid the physician in his efforts. I recall two cases who could not, in the beginning of the treatment, remain long in this position without severe pain, but by regulating carefully the treatment, they were greatly improved. If the uterus is retroverted and gravid, with no tendency to right itself, the dangers of producing abortion are greatly diminished if the patient remains in this position a few minutes before an attempt is made at replacement.

Patients who suffer, soon after getting up from confinement, from dragging weight and pain in the pelvis, back, and sides, are much relieved by taking this position three or four times a day, and especially for a few minutes before retiring; and I believe this assists much in preventing subinvolution and displacements, which are so apt to occur at this time.

For women who work hard, and are on their feet all day, and who, when night comes, complain of fulness and pressure in the pelvis, with dragging pains in the back, etc., I know of no simple means that will give so much relief as the knee-chest position, with a few deep inspirations, before retiring. By so doing, if there is a tendency to prolapse or congestion of the uterus, or too much traction on the ligaments, the uterus is usually replaced, circulation is improved, and the patient rests better as a result.

Sims's position, I admit, is a fair substitute in some conditions, but is not so generally useful, and its favorable results are not so marked. I do not claim, by any means, that this position is a panacea for diseases of women; but it is a valuable adjunct in treating all chronic inflammations of the pelvic viscera and most displacements, and, while I am aware that it may be resorted to too vigorously, especially when there are adhesions, I feel sure that if it were utilized more often, patients would be saved much pain, and recovery would be hastened in a majority of cases. But this adjunct, as well as many others, in order to do good, must be directed by one who understands the physiology and pathology of the pelvic organs.

UNIVERSITY OF MICHIGAN.

CLINICAL MEMORANDA.

ORTHOPÆDIC.

Torticollis as a Cause of Scoliosis.—The great importance given of late to rotation of the bodies of the vertebræ, paralysis and hypertrophy of the thoracic and spinal muscles, faulty positions, contracted inflammatory products intra- or extra-thoracic, inequality of the lower extremities, etc., has led many to neglect or entirely overlook torticollis as a direct factor in the etiology of scoliosis.

The study recently of two interesting cases in which wry-neck was the primary and only cause of the lateral curvature has led me to record them.

CASE I.—C. M., aged six years, blonde female child of healthy parentage and with good previous history, came under my care in 1886, suffering with marked

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lateral curvature of the spine. The mother stated that the child was delivered with instruments, and had from birth a wry-neck, the right sterno-mastoid being contracted and the chin drawn to the left side. This appeared to diminish somewhat, but when about five years of age the curvature of the spine was observed. On examination, there was found a marked cervical curve to the left, another in the dorsal region to the right, and a slight curve in the lumbar region. The child was fairly developed for her age, and the lower extremities were, on measurement, exactly equal in length. The head could not be brought beyond the median line. Tenotomy was proposed, but for the time rejected, and a lateral curvature brace applied, with double-bar suspension, massage, and the use of a hair pillow under the right side. The case did not progress satisfactorily, and the year following a tenotomy of the sterno-mastoid was performed, after which the head assumed a natural position and the deformity diminished under appropriate treatment.

CASE II.—T. B., aged fifteen years, residing in Philadelphia, consulted me recently for a marked curvature of the vertebral column. The maternal father and brother had died of phthisis, but otherwise no hereditary disease or history of deformity could be elicited. Since birth he has always had wry-neck, and there has always been some curvature of the spine and elevation of the right shoulder. The patient is a well-developed youth, whose general health has always been excellent. Two years ago, whilst walking, he was seized with a severe pain in the right shoulder, which continued and led him to seek medical advice. On examination, there was found a marked cervical curve to the left and a compensatory dorsal curve to the right, with elevation of the right shoulder. The head was slightly flexed and drawn to the left side. The lower extremities were of exactly the same length, and there was no tilting of the pelvis.

The exact process by which a cervical curvature from wry-neck induces a lateral curvature of the entire column may be interesting. The deviation of the head to one side and the flexion of the chin upon the thorax by the unilateral contraction induce a bowing of the cervical vertebræ to that side and rotation of the bodies upon one another. There is at once produced a characteristic alteration in the outline of the neck, the graceful double curve becomes flattened, the neck shortened, and the shoulder less prominent on the one side, while the curved line becomes more pronounced, the neck longer, and the shoulder more prominent on the other side.

The natural balance of the column being disturbed, nature endeavors by a compensatory dorsal curve to restore the equilibrium. This induces a rotation of the bodies of the dorsal vertebræ with all its attendant deforming features: the flattening and twisting of the scapula on one side, the deviation of the spinous processes in a serpentine direction from the median line, and the elevation and projection backward of the scapula on the other side. With the development of a third or lumbar curve the crest of the hip becomes obliterated on one side, the waist line deepens, the hip becomes prominent on the other side, and the lateral outlines become everywhere less symmetrical.

The contraction continuing, anatomical changes are produced which not only tend to fix the vertebræ in their deformed relations, but also to exaggerate the abnormal curves. These changes are chiefly atrophy of the bones and intervertebral cartilages on the concave side of the curve, with shortening of the ligaments and muscles, and hypertrophy of the bone and cartilage, with elongation of the ligaments and thickening of the muscles on the other side.

The diagnosis of wry-neck as a cause of lateral curvature, while extremely easy when seen early, becomes exceedingly difficult when the primary, secondary, and even a tertiary curve have developed and the position of the head from the existence of these curves has lost some of its most distinctive features. With the development of the spinal curves, the added prominence of the hip, the growing out of the opposite shoulder, and the distortion of the thoracic wall, in the absence of a direct previous history, the diagnosis becomes uncertain and the treatment, if empirical, becomes unsatisfactory.

In the second case there was no history of direct injury at the time or following delivery, but there was a history of torticollis. With this added to the entire absence of other causes, especially inequality of the lower limbs, the wry-neck as the primary cause of the marked primary cervical and secondary dorsal curve could not be mistaken.

In this case the head was freely movable, but rested in natural repose with the chin to the left side. The patient has a well-developed muscular system, and has responded so well to the usual methods that an attempt will be made to correct the deformity without resorting to tenotomy.

JAMES K. YOUNG, M.D.,
Instructor in Orthopædic Surgery in the University of Pennsylvania.

MEDICAL PROGRESS.

Aristol, a Substitute for Iodoform.—DR EICHHOFF, of Eberfeld, writes quite enthusiastically of *aristol*, a compound of iodine and thymol, recently manufactured by Bayer & Co. (*Monatshefte f. praktische Dermatologie*, January 15, 1890). Eichhoff believes that the new drug will supplant iodoform, not only in dermatological practice, but in other conditions where iodoform has heretofore been used, having the therapeutic properties of the latter drug without its disagreeable odor or toxic effects. The author has employed aristol only in diseases of the skin, including varicose ulcers, eczema, lupus, psoriasis, etc., and, after reporting his cases in detail, concludes:

1. That aristol is in all cases a harmless drug.
2. That it is a powerful parasiticide.
3. That in the ulcerations of tertiary syphilis curative results are obtained more rapidly than with any other drug.
4. It is the most useful of all applications in the treatment of lupus.
5. In the treatment of psoriasis it does not act quite as rapidly as chrysarobin or pyrogallic acid.

The aristol was in most cases applied as a ten per cent. ointment in vaseline.

Glycerite of Belladonna.—MR. A. W. GERRARD highly recommends the glycerite of belladonna for checking the pain of poisoned wounds, boils, and abscesses. Applied to the breast it suppresses the secretion of milk

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with far more certainty than belladonna plaster. It should be made according to the following formula:

℞.—Alcohol. ext. of belladonna } of each 1 part.
Alcohol }
Glycerin . . . . . 2 parts.

Mix the extract and alcohol before adding the glycerin.

A formula that will serve the same purpose, and which is more elegant, is as follows:

℞.—Atropine sulphate . . . 4 grains.
Camphor water . . . 2 fluidrachms.
Glycerin . . . . . 6 " —M.

—*Illustrated Medical News*, January 25, 1890.

Formula for Sulphonal.—MOSSÉ recommends the administration of sulphonal, particularly where sleeplessness exists from bronchitis, in the following manner:

℞.—Sulphonal . . . . . 10 grains.
Rum . . . . . 1 ounce.
Syrup of acacia . . . . . 1 "
Water . . . . . 2 ounces.—M.

Treatment of Eczema.—After considering the necessary means for the internal treatment of eczema, VEIEL recommends the simultaneous administration of arsenic internally along with local treatment. If chlorosis exists, he prescribes iron, to be given an hour before meals; or, if the eczema is dependent on scrofulosis in children, he recommends cod-liver oil and a thorough regulation of the diet. In pruritus he employs chloral internally combined with bromide of potassium. To allay the sensation of itching which is apt to accompany acute eczema associated with much secretion, he recommends the formula originally devised by Unna, consisting of:

℞.—Oxide of zinc . . . . 15 parts.
Gelatin and glycerin, of each . 25 "
Distilled water . . . 45 " —M.

The skin should be washed sufficiently frequently to remove the scabs and keep it clean. Where the eczema is exceedingly moist, the parts may be bathed very often to remove the scabs. Where the eczema is general and the itching is intolerable, a powder of starch containing two per cent. of camphor may be added, and if this does not succeed, borax, salicylic acid, alum, glycerin, and distilled water may be employed, the borax and distilled water being in the proportion of two per cent.

Caries of the Teeth.—According to MILLER, the following formula is one which will be useful in the prevention of dental caries. It consists of:

℞.—Thymol . . . . . 4 grains.
Benzoic acid . . . . 45 "
Tincture of eucalyptus . . ½ ounce.
Alcohol . . . . . 3 ounces.
Essence of peppermint . . 10 drops.—M.

or,

℞.—Thymol . . . . . 3 grains.
Benzoic acid . . . . 45 "
Tincture of eucalyptus . . ½ ounce.
Chloride of mercury . . 10 grains.
Essence of peppermint . . 10 drops.—M.

For these to prove efficacious, it is necessary that the mouth should be thoroughly rinsed, and that the liquid should find entrance into the spaces between the cheek and the gums, and also the spaces between the teeth. Particularly is this the case after animal foods have been taken.

Tamponing the Uterus for Post-partum Hæmorrhage.—DÜHRSSEN'S method of checking post-partum hæmorrhage by plugging the uterus with iodoform gauze, is apparently growing so steadily in favor that the following description of the *technique* (*Lancet*, January 25, 1890), as carried out by Dührssen himself, should be read with interest.

If the uterus does not contract under friction and ergotine injection, the patient is at once placed in the lithotomy position, the external genitals are thoroughly cleansed with soap, and three per cent. carbolic solution; the catheter is passed, the vagina disinfected with at least one quart of three per cent. carbolic solution, and the uterus is then irrigated with the same, or, if the patient is very anæmic, with a solution of salicylic acid (3 per 1000) or with simple boiled water. If bleeding continues, the uterus is explored with two fingers, to make sure that nothing is left behind. The cervix is then seized with one or two vulsellæ and drawn down to the vulva; or the plugging may be done through a duck-bill speculum, or even with two fingers of the left hand used as a duck-bill speculum. The end of the gauze bandage is then seized with long speculum forceps, the left hand grasps the fundus uteri, and the end of the bandage is carried up to the fundus; the bandage is then packed into the uterus bit by bit. The vagina is next packed in a similar manner, or, if there is cervical bleeding, with tampons of cotton-wool. Care must be taken that the packing material is not soiled on its passage into the uterus, for in the only fatal case of sepsis recorded the gauze bandage had been allowed to trail on the floor. This, however, was not in Dr. Dührssen's practice. In severe cases he adopts plugging in the first instance as the safest means. In only one case was hæmorrhage immediately fatal, four other cases died of anæmia after arrest of the bleeding, one of these of œdema of the lungs, which was present before the uterus was plugged. The other case was that of sepsis mentioned above, in which the gauze had been allowed to trail on the floor.

The table accompanying Dührssen's paper (Volkmann's *Sammlung klinische Vorträge*, No. 347) includes many cases of severe hæmorrhage. While it is difficult to estimate the gravity of each case from a description, it would seem that in plugging the uterus and vagina we have a valuable addition to our resources in the treatment of post-partum hæmorrhage, and one that is not prone to substitute one great peril for another; indeed, it is easy to understand that, when properly performed, sepsis is rather avoided than encouraged, the gauze acting as an efficient drain.

Nephro-lithotomy.—In a valuable paper upon renal calculus, MR. W. H. A. JACOBSON (*British Medical Journal*, January 18, 1890) submits the following practical points to be observed in the performance of nephro-lithotomy:

1. Count the ribs. That this is not an unimportant

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detail is proved by the fact that Dumreicher, of Vienna, accidentally opened the pleural cavity in an attempt to remove a pyelo-nephritic calculous kidney. *Post-mortem*, the last rib was found to be rudimentary, and the pleura projected below the lower edge of the eleventh rib.

2. Make a sufficiently free incision, especially in a stout patient, and a deep loin. Additional room may be gained by converting the usual lumbar incision into a T-shaped one, or by making use of König's incision, in which the muscles are cut through as far as the rectus, and the peritoneum pushed forward. A small stone in a kidney will always be liable to be overlooked, but a surgeon does not give a patient or himself a fair chance who is content with exposing the kidney through a limited incision, and then trusting to punctures with a needle.

3. Pack the colon out of the way with sponges, as it is often troublesomely distended with flatus in these cases.

4. If the stone cannot be felt either in the pelvis or after palpation of the posteror and anterior surfaces of the kidney, this should be drawn up and out of the wound as far as possible, and again examined, a careful watch being kept upon the pulse.

5. In puncturing the kidney, try, as far as possible, to open the calyces systematically.

6. If palpation and acupuncture fail to reveal a stone, the kidney should be carefully opened and sounded.

7. Hæmorrhage from an incision into the kidney is certainly arrested by firm, careful plugging with strips of sal alembroth gauze. On the five occasions on which Mr. Jacobson has adopted this plan, he has removed the strips the next day with the aid of a few minutes' anæsthesia, gas sufficing for this. It is said that the plugging may cause vomiting, but this did not occur in any of his cases. Care must be taken that the plugging is thoroughly done. If inadequate, it will have to be repeated in a few hours—perhaps more than once—thus leading to exhaustion, and setting up cellulitis, which may of itself be fatal, owing to the important relations of the kidney.

Treatment of Pregnancy during Phthisis.—At a recent meeting of the Obstetrical Society of London (*British Medical Journal*, January 18, 1890) DR. WILLIAM DUNCAN reported a case of pregnancy during phthisis, in whom he had induced premature labor. In the course of his remarks he stated his belief that during pregnancy phthisis was not retarded, as was formerly believed, but hastened. This was especially the case in women between twenty and thirty years of age. When phthisis was progressive, in early pregnancy, there could, in his mind, be no question that the proper course to pursue, after careful consideration of the case in consultation, was to empty the uterus of its contents. Even when the phthisis was stationary, it was safer to empty the uterus at once than to let the pregnancy proceed to term. When the patient was seen for the first time late in pregnancy, the child being viable, the case was different. He would be guided, under these circumstances, by the condition of the lungs. If phthisis were stationary, though well marked, he would wait until full term had nearly arrived, and then, in order to save the patient all suffering and the strain on her system consequent on natural delivery, he would dilate the cervix with graduated bougies, followed by the hydrostatic dilators, until it was sufficiently expanded to permit of delivery by the forceps or version, as the case indicated. Full antiseptic precautions would be taken. If, however, the pulmonary disease were markedly advancing, the interests of the mother and child would be best served by effecting delivery in the same manner without delay, instead of waiting until the full term had been reached.

In discussing this paper, DR. PLAYFAIR thought that the treatment advocated was unjustifiable, and liable to serious abuse in early phthisis. In advanced phthisis the matter was different; but even then, there were not sufficient grounds or believing that premature labor would materially change the course of the disease. On the whole, he believed that Dr. Duncan's case was a dangerous precedent. The other members of the society, without exception, condemned the course of treatment advised and pursued by Dr. Duncan.

Menthol in Diseases of the Throat and Nose.—MR. J. LENNOX BROWNE says that the vapor of menthol checks in a manner hardly less than marvellous, acute colds in the head, and is also to be recommended with a certainty of success, if used on its first onset, in arresting epidemic influenza, even in cases in which the nasal symptoms commonly associated with the word influenza are not manifested.

Menthol exerts its action in the following manner:

1. It stimulates to contraction the capillary blood-vessels of the passages of the nose and throat, always dilated in the early stages of head cold and of influenza.

2. It arrests sneezing and rhinal flow.

3. It relieves, and indeed dissipates, pain and fulness of the head by its analgesic properties, so well known when applied externally to the brow in cases of *tic douloureux*.

4. It is powerfully germicide and antiseptic. It thus kills the microbe of infection, and prevents its dissemination.

The remedy may be employed by means of a general impregnation of its vapor through a room or house, or locally to the nostrils and air passages: for both of which purposes there are several methods:

(*a*) A ten to twenty per cent. solution of menthol in almond oil, in liquid vaseline, or in one of the many other odorless paraffin compounds, can be sprayed into the nose or throat, or about a room.

(*b*) By placing twenty or thirty grains in an apparatus specially designed by Rosenberg for administering the drug in cases of laryngeal phthisis by inhalation, in the form of vapor mingled with steam.

(*c*) By a simple arrangement of placing a saucer of water containing a similar quantity of the crystals over a gas burner in the hall, by means of which the whole house is kept constantly permeated with the drug.

(*d*) But by far the most convenient method for personal use is to carry always the ingenious pocket menthol inhaler, known as Cushman's, which should be used not only on the first approach of an attack, but three or four times a day in "cold-catching" weather by those subject to coryza.

The instrument consists of a glass cylinder four inches in length, half an inch in diameter, and open at both ends. The tube contains crystals of menthol closely

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packed and prevented from escape by perforated zinc and cork. The opening at one end is twice the size of the other, the larger being intended for inhalation by the mouth, the smaller for the nostril. The latter is the method which the author, by preference, recommends. It is not to be simply smelt, but well sniffed or inhaled, so as to cause some tingling or smarting, a sensation which is quickly followed by that of coolness, and openness of the previously "stuffed" and heated nostril. By its use, when the nasal discharge is excessive, it is checked; when deficient and thickened, as in hypertrophic rhinitis, its healthy character is restored; and when arrested, inspissated and malodorous, as in atrophic rhinitis, fluidity is promoted and the foul smell corrected.—*Boston Medical and Surgical Journal*, January 30, 1890.

[Our own experience is that ten or twenty per cent. solutions of menthol in oil cannot be sprayed into the nasal cavities, unless there is advanced atrophic rhinitis, without causing considerable pain and discomfort to the patient.—ED.]

Preparation of Ergotin for Hypodermic Injection.—According to MR. A. W. GERRARD, the officinal ergotin (B. P.) is merely a purified extract of ergot, although it well represents the activities of the crude drug. The chief objection to its hypodermic use is the irritation it causes, which, however deeply it may be injected into the muscles, is at times very great. Gerrard finds that ergotin is very acid in reaction and full of inert matter, and that if these are eliminated great improvement results. For this purpose one part of ergotin may be treated with four parts of absolute alcohol, stirring well during the addition. Then pour off the alcoholic solution and evaporate over a water bath to a soft residue. This treatment removes inorganic salts and a mucus-like substance. The acid still remains, and should be carefully neutralized with a solution of ammonium. Ergotin thus treated is highly active, and rarely causes severe irritation after injection. To prepare a solution that keeps well for hypodermic use, rub up one part of ergotin with one of glycerin and two of water.—*Illustrated Medical News*, January 25, 1890.

Caustic Paste for the Removal of Epithelioma.—At a recent meeting of the New York Dermatological Society (*Journal of Cutaneous and Genito-urinary Diseases*, February, 1890), DR. LEWIS presented a case which had been satisfactorily treated by means of the following elaborate paste, which was first described by Dr. Bougard, of Brussels:

Wheat flour	60 parts.
Starch	60 "
Arsenic	1 part.
Cinnabar	5 parts.
Ammonium chloride	5 "
Mercuric chloride	0.5 part.
Saturated solution of zinc chloride	245 parts.

The first six ingredients are separately ground to a fine powder, and mixed in a mortar. The zinc chloride solution is then slowly added while the contents are rapidly stirred. The soft mass is then poured into an earthen pot, and, if covered, will keep in good condition for months.

In the case reported, the outer horny covering of the epithelioma was first removed with liquor potassa, the paste was then applied and allowed to remain for thirty hours, after which poultices were applied for three days. At the end of that time the slough came away, leaving a healthy granulating surface.

The Surgical Treatment of Hepatic Abscesses.—At the conclusion of these instructive lectures on the surgical aspects of hepatic abscesses, MR. RICKMAN J. GODLEE (*British Medical Journal*, January 25, 1890) submitted the following rules for the treatment of the several varieties:

1. Pyæmic abscesses do not call for surgical interference, or, if in rare cases one should point, it is only opened to relieve symptoms, but without hopes of doing permanent good.

2. The same observations apply to abscesses resulting from suppurative phlebitis of the portal vein.

3. Multiple abscesses associated with dysentery or ulceration of the bowels are very unfavorable for surgical treatment. They must, however, be opened and treated on the same lines as the single or tropical abscess, because they cannot be certainly diagnosed.

4. Single abscess of the liver, whether tropical or not, must, if it approach the surface, be opened, the following precautions being adopted:

(*a*) If it present at the epigastrium, the presence of adhesions must be ascertained before incising the liver.

(*b*) If through the chest wall, a spot must be chosen below the normal limit of the pleura; but, if by chance either pleura or peritoneum be opened, the opening must be closed with a double row of stitches before incising the liver.

(*c*) Strict antiseptic precautions must be adopted throughout, either carbolic acid or some slightly soluble salt of mercury being employed for the dressings.

(*d*) The tube must be of large size at first, and a tube of some sort must be kept in until the discharge is reduced to a very minute quantity.

If the abscess have burst into the lung, pleura, pericardium, peritoneum, or kidney, and the position of the abscess can be clearly determined, it must be opened without delay. If the position of an abscess be only suspected and the patient be losing ground, it is right to puncture the liver in the most likely situations, bearing in mind that, though usually quite harmless, a slight amount of risk accompanies this very trivial operation. This rule applies to cases in which the abscess has ruptured into any of the cavities enumerated above. If, on the other hand, whether the abscess have ruptured or not, there are no means of diagnosing the whereabouts of the matter, and the patient be not losing or even gaining ground, the surgeon should hold his hand for a time.

5. Hydatids of the upper and back parts of the liver are to be treated upon the same lines; but in cases of this sort, and in those of subdiaphragmatic abscess, it must be remembered that the diaphragm may be pushed up a very great height, thus closely simulating intrapleural suppuration.

6. Empyema, pericarditis, and peritonitis caused by rupture of an hepatic abscess or hyatid must be promptly dealt with on general principles.

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SATURDAY, FEBRUARY 22, 1890.

THE TREATMENT OF CARBUNCLES AND FURUNCLES WITH TINCTURE OF IODINE.

SINCE the discovery of the microbic origin of boils and carbuncles, there has naturally followed a modification in the means of treatment of these painful and, at times, dangerous affections. Knowing that they are caused by the entrance of specific microbes into the cutaneous glands, the rational means of cure must be sought amongst the antiseptics, which must be brought in contact with the focus of disease.

An interesting article upon this subject, by M. BEAUQUINQUE, appears in the *Revue Générale de Clinique et de Thérapeutique*, No. 46, 1889. The paper has especial reference to, and has the title, "The Treatment of Carbuncle of the Face by the Tincture of Iodine," but also speaks of the antiseptic treatment of furuncles and carbuncles in general. Three striking cases of carbuncle of the lip, all of them severe, are reported as having been successfully treated by the application of tincture of iodine. No more striking instances than these could have been chosen, for every surgeon of experience knows how serious an affection carbuncle in this situation is, as well as the extreme degree of suffering it causes. Of the old-time methods of treatment none is satisfactory, and all are here open to objections. Incision, whether crucial through the lesion, or elliptical surrounding it, is sure to provoke troublesome, if not dangerous, bleeding; poultices tend to increase the already extensive swelling and œdema—which themselves constitute, in some instances, a well-grounded source of alarm; and, for the same reason, the employment of the thermo- or galvano-cautery leaves much to be desired.

If the application of the tincture of iodine can lead to such happy results as those given by M. Beauquinque in the cases, and in the region referred to, it certainly must prove a valuable remedy for the affection wherever situated. The method of applying it is a simple one. The crust or film which closes the orifices of the carbuncle having been carefully scraped off, the tincture is applied several times by means of a brush or a dossil of cotton. The procedure does not cause much pain, and even in extensive cases does not give rise to toxic symptoms. For the latter reason, the tincture may in such instances be injected into the interior of the lesions.

Besides the tincture of iodine, other antiseptics have, of course, been employed in the treatment of carbuncles and boils, the principal ones being boric acid, carbolic acid, and the bichloride and biniodide of mercury. In order to insure success, it is necessary that the solution should be an alcoholic one, for water cannot gain entrance into the greasy sebaceous follicles wherein the source of trouble lies, whereas alcohol can. Of the above-named antiseptics, boric acid seems the least worthy of confidence, its germicidal power being so far below that of the others. Carbolic acid may, in severe cases, especially if injected into the centre of the lesion, or around it, produce toxic effects; bichloride of mercury, used in the same way, would give rise to severe pain.

In the tincture of iodine we have a harmless and efficient remedy, endowed with ample antiseptic power. If early applied, it is needless to say that the certainty of its abortive action is promoted.

The substitution of such a remedy for the knife, the cautery, or the poultice, is certainly a welcome improvement in surgical treatment, and is but one of the many things for which we are indebted to the study of bacteriology on the one hand, and to the development of antiseptic methods on the other.

ANÆSTHETICS.

IT would be hard to find, in the whole domain of medicine, any one thing which does more toward

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its retardation than absolute, dogmatic assertion based upon limited experience; and the expression, that the worst enemies to science are its own friends, finds ample illustration in the question of anæsthesia. In THE MEDICAL NEWS for November 9, 1889, we attempted to show the impossibility of saying that any one substance could and should always be employed for the relief of pain, and insisted upon the employment of one or the other not because it was chloroform or ether, but for the reason that common sense indicated which was best in each case. The opinion was expressed at that time that chloroform was the more dangerous of the two, and that it required greater care in its administration than ether; a care often almost impossible to bestow if the physician is not provided with a skilled assistant. No one can deny that all anæsthetics are dangerous, and that the functional inactivity of the perceptive centres in the brain produced by their use, if it extends to the vital centres in the medulla, may cause death. The questions are, Which drug is the safest? Which has had fewer accidents? What cases should be given ether, and what cases chloroform?

For a number of years the London *Lancet* has been most vehement in its attacks on chloroform as an anæsthetic, and has been so positive concerning its views as to endanger the standing of physicians who employed this drug. The position of THE MEDICAL NEWS has been decidedly in favor of ether, but, notwithstanding this fact, the value of chloroform in certain states has not been gainsaid; neither have the opinions of a large number of physicians, particularly in the West and South, been ignored.

The object of this editorial is to place THE MEDICAL NEWS on record as protesting against the indiscriminate language used heretofore by the *Lancet*, and its positively harmful and dangerous assertions made much more recently. Having decried chloroform as a producer of awful accidents, it now not only defends it but even goes so far as to assert, editorially, that chloroform is so safe that death is never produced unless negligence on the part of the physician is most flagrant. Such utterances endanger the professional reputation and ability of everyone who uses chloroform at any time, be the circumstances what they may. There are a certain number of instances where risks must be taken, and others in which no amount of care can put aside an accident. Further than this, the most eminently skilful operators in the world have lost cases, and therefore stand accused by the *Lancet* of killing their patients because of ignorance or carelessness. If the members of the profession are willing to expose themselves to law-suits and prosecutions for malpractice when they are so unfortunate as to lose cases under chloroform, the editorial comments in the *Lancet* possess no interest and may go uncontradicted; but if the unavoidable accidents occurring under anæsthesia are to be considered as indicative of professional disgrace, it is certainly of importance that they be not allowed to pass as generally accepted facts and a reflection of the opinions of the entire medical fraternity.

SOCIETY PROCEEDINGS.

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, December 3, 1889.

THE PRESIDENT, D. HAYES AGNEW, M.D., IN THE CHAIR.

DR. THOMAS G. MORTON gave a partial history of a case of

TOTAL PARALYSIS OF MOTION AND SENSATION

under the care of Dr. Sinkler, at the Orthopædic Hospital, in which he removed some weeks ago the spinous processes of the eighth, ninth, tenth, and eleventh vertebræ, with a decided improvement in the symptoms. Dr. Morton commented particularly on the ease with which the operation was performed, the only instruments required being a knife and a pair of long, sharp bone-cutting forceps.

In the discussion which followed, DR. WILLIAM HUNT remarked that he had been present at the operation and was surprised at the amount of oozing. Whether this was the result of hypostatic congestion or belonged naturally to the part, he could not say. Under the use of hot water it ceased. He inquired if any one knew whether in man or animals the cord pulsates as the brain does? In this case the cord did not pulsate. He had had no other experience with the living cord, but supposed it is through the circle of Willis acting upon the full cranial contents that the familiar pulsations of the brain are produced.

DR. J. EWING MEARS said that as we are now just at the beginning of our experience in spinal surgery, every case in which operation is performed increases our knowledge. Some months ago he reported to the Academy a case of fracture of the first lumbar vertebra in which he removed the laminæ, articulating processes and spinous process of the vertebra, and in this way relieved the pressure, although he was unable to reduce the dislocation.

The fracture had been produced by a fall from a window during an epileptic seizure. There was complete paralysis of sensation and motion when the patient was brought to the hospital. At the operation he did not note any pulsation of the cord, nor was the hæmorrhage unusually free. The condition improved after the ope-

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ration. Motion and sensation returned, and when he last heard from her she was able to go about on crutches.

DR. DEFOREST WILLARD said that Dr. Burrell, of Boston, who some months ago operated on the spinal column for pressure paralysis, had a pair of forceps made with the lower blade flat, while the upper blade was the cutting one. With the ordinary bone forceps he thought that there might be some danger of wounding the cord.

Dr. Willard then requested the opinion of the Fellows present, as to the best course to pursue in a case of a bad double crush, such as he had seen a few days ago; a man with both legs run over, so weak that he was apparently dying, with a feeble, fluttering pulse and yet with bleeding sufficient to require the application of rubber tourniquets. The pain of the tourniquets seemed to cause as much depression as an operation, yet the patient was too sensible to permit operation without ether. His condition was such that the administration of ether would probably have been followed by death in a short time. The man gradually failed and died in less than twenty-four hours, never reacting sufficiently to make it safe to operate. Both thighs were comminuted for some distance and there was concealed hæmorrhage, the skin not being broken to any extent. It is difficult to know what to do in such cases, whether the shock of a rapid operation would be greater than the loss of blood occasioned by delay, or more depressing than the excessive pain of a tourniquet. If the wound is large, local pressure with antiseptic packing is less painful than compression above.

DR. MORTON, in reply, said that he had had considerable experience in such cases, and when bleeding occurs from lacerated crushed tissues he always tied the bleeding vessels in the wound if possible; if this was not practicable, he then cut down and ligated the main arteries above the region of injury. He would never apply a tourniquet, because of the pain, and on account of the injury to the tissues so constricted.

DR. HUNT agreed with Dr. Morton in regard to the tourniquet. From a surgical standpoint it is our duty to try to save life, but from a sentimental one he should rather let the patient alone after taking away all sources of irritation and suffering and wait for reaction. To operate at once would be almost certain death. If reaction occurred it might become our duty to operate. He confessed that in those cases of terrible multiple maiming, especially in children, it was a relief to him to hear that death had taken the patient from our hands.

DR. F. H. GROSS had several times performed double amputation in such cases, but had not had the patients die upon the table, although they came very near it, and in one apparently hopeless case death took place on the following day. During his last term of service at the German Hospital, he had under his care a man who had fallen a distance of over one hundred feet while painting a church steeple, striking the roof and then bouncing like a ball from the telegraph wires upon an iron railing on the sidewalk. He sustained severe lacerations and was in profound shock. Valuable time was lost in persuading his friends to have him submit to two necessary amputations. Dr. Gross removed one leg and one arm near the shoulder-joint. The other arm and leg were also fractured, but the injuries there were not compound, although the bones about the ankle felt like a bag of broken crockery.[1] In his military experience, it seemed to him that men suffered more profoundly from shock when a limb was entirely carried away than when both soft parts and bone were severely lacerated and crushed by the missile.

DR. MEARS then referred to two

OPERATIONS FOR CHRONIC OSTEOMYELITIS.

The first case was that of a girl twenty-two years of age, in whom he trephined the radius in the lower third. He curetted the medullary canal, carrying the instrument upward three or four inches, cleared out the cavity and put in a drainage-tube. The patient recovered, and is now an assistant in the hospital, with a useful arm. Before the operation the arm had been useless and the seat of great pain.

Four weeks ago he performed excision of the hip-joint, removing the head and neck of the bone and scraping the acetabular cavity, which was slightly involved. After removing the head of the bone, he found the femur to be the seat of osteomyelitis; he therefore removed two and a half inches more of the bone in the hope of reaching sound bone, but in this was disappointed. He then curetted the medullary canal, carrying the curette three or four inches toward the lower extremity of the bone. The patient now was in excellent condition, suppuration has decreased greatly, she is sitting up, and the general condition is better than for months. What the ultimate result will be, and whether or not the limb will be a useful one, he was unable to state.

In the discussion which followed this report, DR. WILLARD said that about the first of last May he had excised a hip in which the femur presented the condition described by Dr. Mears. He removed several sections of bone until he got below the lesser trochanter, when, finding that the periosteum was loose and that the signs of osteomyelitis extended two or three inches further, he thought it unwise to remove more of the bone. He curetted it thoroughly, dressed it antiseptically, and in three months it had healed almost entirely. The child was in good condition, but there was some thickening about the femur that made him suspicious. He had seen the child again to-day. The wounds had reopened and the disease was progressing down the femur. Under antiseptic dressings, we often secure prompt healing of the wound, while at the same time the disease steadily creeps on. He thought that a better operation in such a case would have been amputation at the hip-joint.

DR. MORTON referred to a similar case on which he had operated many years ago, at the Pennsylvania Hospital. There was great shortening, with a useless limb. The patient died subsequently from phthisis.

He said that Dr. W. J. Duffy was the first to amputate at the hip-joint for the condition which has been described. This operation was performed at the Philadelphia Hospital about 1840, and the patient recovered.

DR. WILLIAM G. PORTER then asked the opinion of the Academy on the treatment of gangrenous hernia. A week ago a woman was admitted to the Philadelphia Hospital with a hernia which had been strangulated four

[1] The patient recovered.

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days. On opening the sac, Dr. Porter found a mass of gangrenous omentum and two or three inches of gangrenous bowel. He relieved the stricture, and allowed the bowel to remain in the wound. He deliberated some time as to the best course to pursue, whether to perform excision of the bowel, doing the old-fashioned operation with the Lembert suture, or to do the modern operation of lateral anastomosis, or to allow the formation of an artificial anus, to be followed later by an operation for its closure.

It seemed to him that we do not know what is exactly the best procedure in these cases. Each case must, of course, be studied by itself. After a patient has suffered with an unrelieved hernia for four days, she is not in a condition to stand any prolonged operation. He had recently come across the report of three cases, in which the primary operation was done with success. His experience with these cases has been unsatisfactory. The case just referred to lived nearly a week. Another, that of a boy with strangulation for several days, lived twenty-four hours. In still another case there was gangrene of a large portion of the omentum, but simply a small perforation in the bowel. This he pinched up, placed a ligature around and returned to the abdomen. There was one passage from the wound, and after that there was no further trouble. He had seen three or four cases in which there were gangrene, perforation, and fæcal extravasation. All these cases died.

DR. MORTON said that a patient with gangrenous hernia is generally so exhausted that any operation of magnitude, such as laparotomy, would be impracticable, and we have to be content with removing the gangrenous portion of the bowel, and then making an artificial anus.

DR. MEARS thought this question one of great importance, and, as Dr. Porter had said, each case must be judged on its individual merits. The question had been fully discussed at the last meeting of the American Surgical Association, and there were various and diverse opinions expressed. There seemed to be no definite decision reached.

DR. PORTER said that some time ago he was called to the hospital to see a woman who had a hernia strangulated for about a week. It was a large, right inguinal hernia. The Resident had had no trouble in restoring it by taxis, without ether. The stercoraceous vomiting, however, continued, and diarrhœa set in at the same time. This was a combination he had never seen before. After consultation with two of his colleagues, he concluded that it was right to give her the chance that laparotomy would afford. He made a median incision, and explored all the hernial openings. There was no peritonitis, no evidence of rupture, and no signs of intussusception. The woman's condition was so critical as not to warrant turning the intestines out and examining them systematically. The operation was completed, and the woman died shortly afterward. At the post-mortem there were found adhesions between three coils of intestine, which had kept up the strangulation. With the exception of these adhesions, the bowels were in good condition.

CORRESPONDENCE.

ST. LOUIS.

To the Editor of THE MEDICAL NEWS,

SIR: Our St. Louis Medical Society, like most similar organizations, has had many variations as to the interest of its meetings and the value of its discussions. At times there have been stormy scenes, when it seemed more like a meeting of ward politicians, and when the discussions were characterized by uncomplimentary personalities that were utterly unworthy of a company of scientific gentlemen assembled in the interest of a profession which they all claimed to love. At other times, the work done there has been such as would reflect credit upon any society. At all times its offices of honor have been much prized and eagerly sought

A year ago there was a great disturbance at the annual election; charges of illegal voting being freely made on both sides, and two sets of officers claiming that they were the choice of the Society. It resulted in a temporary split of the Society, two meetings being held at different places by the two factions for several successive weeks. At length, however, the smaller division voted that in the interest of harmony in the profession they would discontinue their separate meetings. Some returned and took part again in the regular meetings of the old Society, while others united with a number of physicians, not members of the Society, in the organization of the St. Louis Academy of Medicine.

On December 28, 1889, the annual meeting of the old Society took place. After a brief address by the retiring president, the reports of the various officers were read. It appeared from the report of the secretary that the average attendance at the weekly meetings during the year was over forty.

Before the meeting, it had been currently reported that there would be great excitement over the election of president, inasmuch as it was asserted that four specialists on insanity and nervous diseases were aspirants for the office. As a matter of fact, when the ballot was taken, without nominations being made, three of these gentlemen had large votes, but none of them had a majority. On a second ballot, however, Dr. J. K. Baudry secured 42 of the 83 ballots cast, and was thereupon declared elected. The other officers were: Dr. F. D. Mooney, Vice-President; Dr. Garland Hunt, Treasurer; Dr. W. Blickhahn, Recording Secretary; and Dr. E. S. Smith, Corresponding Secretary. Following the meeting a large number of the members adjourned to the supper-room of one of the most popular restaurants, where a banquet was spread, to which full justice was done by all. Later, toasts were drunk and responses made, and it was a late, or rather very early hour, when the festivities terminated.

Nearly all, or perhaps all, of our large cities, and many of the smaller, have, in more or less successful and efficient operation, training schools for nurses. We have one here, which has done admirable work in connection with the City Hospital. The course of instruction lasts during two years. Those in charge have been most painstaking and conscientious in their work, and very careful and exacting in their requirements, so that the physicians of the city have learned that the diploma of the Training School for Nurses is a full guarantee of ability and reliability.

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Without disparaging in the slightest degree the support given by others, it is only just to say that in large measure the success of this institution is due to the indomitable energy and wise tact of the president of the Ladies Board of Managers, Mrs. W. H. Pulsifer, herself a thoroughly experienced and cultivated physician. A large and suitable building has been erected at a convenient distance from the City Hospital, which is occupied as a "Nurses' Home," all the pupil nurses having their rooms therein, as well as some of the graduates.

Last summer, the officers and staff of St. Luke's Hospital organized another training school in connection with that institution. They have a special building adjoining the hospital for the residence of the pupil nurses, and propose to send out their nurses with diplomas after one year's service in the hospital, during which they will receive lectures from the staff, and clinical instruction in the wards and private rooms of the hospital.

I understand that a third training school is to be established in connection with the Protestant Hospital. Of this I will give further details in a future letter.

Among the items of journalistic interest, I may mention that with the January issue the *St. Louis Polyclinic* assumes the title of the *St. Louis Courier of Medicine*, the publication of which was discontinued a year ago, as mentioned in a former letter. The faculty of the Post-Graduate School of Medicine have disposed of their interest in *The Polyclinic* to Dr. L. A. Turnbull, who edited it for them, and he having secured the coöperation of some of those formerly identified with the *Courier*, takes that name in preference to the other.

NEW YORK.

To the Editor of THE MEDICAL NEWS,

SIR: At this season of the year our medical societies generally experience an increase in activity, and the members filled with good resolutions for the new year, and perhaps urged on by the enthusiasm of newly elected officers, are wont to bring forward an array of peculiarly interesting papers. The County Medical Association enters upon another year's work under very auspicious circumstances, having an active membership of four hundred and thirty, which is an increase during the past twelve months of seventy per cent.

A practical paper on "The Treatment of Typhoid Fever," read before the Academy of Medicine the other evening, by Dr. W. H. Thomson, brought out a very instructive discussion. In the cases which formed the basis of his paper, the eruption was chiefly conspicuous by its absence; diarrhœa was unimportant; and some of the cases were even marked by obstinate constipation. He did not confine himself to any one method of treatment; but when the fever was excessive, employed baths, according to the method of Liebermeister; when tympanites required attention, administered the resin of turpentine; and for the diarrhœa and gastric disturbances, made use of large doses of the subcarbonate of bismuth. The patient was fed on milk and lime-water, and digestion aided by giving saccharated pepsin, usually in conjunction with dilute hydrochloric acid. This milk diet was well tolerated in most instances, and it was rarely necessary to resort to opiates for the control of diarrhœa; and he attributed this to the excellent antiseptic properties of lime-water. He denounced all the antipyretics of the coal-tar series, including quinine, as highly dangerous on account of their depressing action on the heart.

Dr. E. G. Janeway was inclined to be sceptical in regard to statistics bearing upon the treatment of this disease, because he had seen many cases abort. He sounded a note of warning against the use of strophanthus, for it had proved a delusion and a snare. In some cases it had produced a very exhausting diarrhœa, which ceased on discontinuing the drug, and returned when the medicine was resumed. Independently of this disagreeable feature, it was not the weapon for one to use in fighting so serious a disease; for its preparations were very uncertain, so much so, that he had known of a half drachm of the tincture having been taken without any appreciable effect.

Dr. A. Jacobi had noticed this dangerous peculiarity of strophanthus, and had found that even the preparations furnished by Merck and Squibb were widely different. He did not doubt the frequency of the abortive form of typhoid among children, but he considered it very uncommon among adults.

Dr. S. Baruch, the champion of Brandt's cold bath treatment of typhoid fever, again urged a more general recognition of the advantages of this method. When the temperature reaches 104° the patient should be immersed in a bath at 65°, and kept there for fifteen minutes; and this bath is to be repeated every three hours until the fever keeps within more moderate limits.

While bringing forward this method of treatment with great earnestness and candor, Dr. Baruch does not tell us what is to be done with patients whose vitality is at so low an ebb that they cannot react after this vigorous treatment.

As is usual, the question of diet brought out various opinions, most of those present resuming solid food very cautiously, and only when the patient was well along on the road toward convalescence. Dr. G. L. Peabody took pity on the poor fever-worn sufferer, and even before his temperature had quite reached normal, if he were very hungry, allowed him a very little chop or beefsteak once a day. He had made this innovation with some trepidation, but had seen no bad results from it; and it was not unreasonable to suppose that the intestines were relieved of considerable work, as this food produces much less refuse matter than an exclusive milk diet. As regards stimulants, he prefers "the wine of America"—whiskey.

This is an age of iconoclasm in medicine, and our cherished household gods must go; and so it is not surprising to hear that not only must the old-fashioned beef-tea be banished from the sick chamber, but even that made from Liebig's extract can no longer hold a place in the confidence of good orthodox physicians; for, Dr A. H. Smith tells us it is "about the most homœopathi diet imaginable."

In these days of sneezing and aching bones, it is but natural that those of us who are well enough to be around, should turn our steps toward the Academy of Medicine to listen to a paper on "La Grippe." Never was an audience better prepared to discuss the subject from the standpoint of personal experience. This time the speaker was one of our energetic medical women—Dr. Louise Fiske Bryson—who gave a sketch of various epidemics of influenza which had visited different parts of the

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world, and stated that just one hundred years ago this country had been favored by a similar visitation. She called attention to the fact that although the total number of deaths must be large, on account of the great number of persons affected, the mortality was only two per cent. No locality was exempt from it; for it visited mountains as well as valleys, and even those in mid-ocean did not escape it. It was not infectious, but there could be no question about its being contagious. The symptoms were about the same in every epidemic, and the treatment consisted usually in the administration or calomel or some other cathartic, along with quinine and antipyrin. She thought that these epidemics of influenza were due to peculiar atmospheric conditions, and certainly the remarkable weather of this season impressed the hearers with the soundness of this theory. Although it has been announced that a special bacillus has been found in connection with this epidemic, we are not likely to derive much benefit from this discovery, for the influenza is rapidly on the wane. Dr. Bryson gave this advice to those who are attacked by "la grippe:" "The use of alcohol is forbidden. Go to bed, and stay there for five days; eat light food; use foot-baths; and let there be quiet of mind and body, together with an entire absence of friends, save those who are in immediate attendance upon you." Judging from some cases which have been ushered in by sudden and very acute symptoms, which passed away almost as quickly as they came, the advice "to stay in bed for five days," is certainly somewhat dogmatic.

In connection with the subject of the influenza, it is amusing to note the varying capacity for work displayed by individual physicians. One well-known medical gentleman triumphantly announced that during the height of the epidemic, he saw in one day no less than eighty patients; another physician said that forty-four had wanted him, but that it was "a physical impossibility to see them all;" while a third complained that he had been completely exhausted in attending to twenty-six patients.

CINCINNATI.

To the Editor of THE MEDICAL NEWS,

SIR: Dr. C. D. Palmer, of this city, has been made the victim of a malpractice suit for the sum of $10,000. The charge is that he negligently permitted a fragment of a large needle to remain in a patient upon whom he had performed perineorrhaphy. Dr. Palmer admits that he permitted the fragment of needle to remain as alleged, but denies that it was through negligence.

The facts in the case are about as follows: In April, 1888, the defendant performed perineorrhaphy upon the woman who now makes the complaint. At the close of the operation, he discovered that the extremity of his needle had been broken. He could not well determine whether the fragment had remained in the soft parts of the patient or had fallen to the floor. As the patient was then in a much prostrated condition from anæsthesia, he did not deem it prudent to prolong the operation for the purpose of search. As the fragment was not found after the operation, he feared that it had been retained, and for some time interrogated the patient for symptoms of its presence, and made such examination as the recently united parts would justify. Before, however, a proper time came for the thorough examination, Dr. Palmer met with a serious accident, being thrown from his carriage and so severely injured that, for months, his life was despaired of, and for more than a year he was prevented from resuming the practice of his profession.

In the meantime, the woman began to suffer severe pelvic pains. Having no suspicion of the possible presence of a foreign body, she fancied that her pain was due to ovarian disease, and applied to Drs. W. H. Wenning and George E. Jones, of the St. Mary's Hospital, to have the fashionable operation of oöphorectomy performed. The ovaries were found free from disease, and it was decided to repair the perineum still further, and it was while making the denudation that the operator discovered the fragment of needle, about an inch in length, and removed it. Its removal was followed by complete, although not immediate, relief.

Dr. Palmer is a leading specialist of our city. He is Professor of Diseases of Women in the Medical College of Ohio, Gynecologist to the Cincinnati and Good Samaritan Hospitals, and an Ex-President of the Cincinnati Academy of Medicine. His opinion is always expressed in clear and decisive language, and is always regarded as authoritative. The misfortune could not, therefore, have fallen upon one more unlikely to be guilty of the charge. The fact that he permitted the needle to remain in the tissues until the time of his injury is, in the eyes of the local profession, sufficient evidence that this was the proper course to pursue, and no one doubts that had he been permitted to continue his treatment of the case, it would have been conducted to complete recovery at a proper time.

Of course a case of this character could not occur without exciting much unfavorable comment, particularly against the surgeons who performed the second operation. Some individuals go so far as to accuse them of wilfully inciting the prosecution. There is, however, no ground for such accusation. Had it not been for the presence of a special nurse employed by the patient, and not connected with the hospital, the fact that a foreign body had been removed would probably never have been known outside the operating room, and the emphatic assertion of the gentlemen who performed this operation that they made no comment upon the discovery of the needle-point is, in a measure, corroborated by the fact that fully six months elapsed before litigation was decided upon.

The affair is an exceedingly unfortunate one throughout, and one which, if reports be true, is now regretted as well by the party bringing the suit as by all those who are involuntarily brought into it.

A very unhappy and unfortunate episode occurred last Thursday, which promises to add vigor to the proceedings against Dr. Palmer. In the *Lancet-Clinic* of Jan. 25th, the Editor, in referring to the case, took occasion to condemn the attorneys connected with it in language which is, perhaps, more vehement than judicious. He denounced the proceedings as the most "contemptible, villanous attempt at blackmail" of which he had heard, saying, also, "Our ardent hope and wish is that the doctor will at once take measures to turn the tables on these legal buzzards who, for a possible contingent fee, would attempt to rob him, and who, by their acts, have tried to bring a highly honored and honorable practitioner of the medical profession into contumely and con-

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tempt. Out upon such villains, unworthy members of a dignified profession!"

The attorneys against whom this charge was made are young but prominent members of the Bar, and have heretofore borne a reputation for honest dealing; they doubtless took charge of the case in good faith and without thought of blackmail. So incensed were they, however, at this charge, that they promptly repaired to the office of the *Lancet-Clinic* and proceeded to make a most cowardly attack upon the Editor, Dr. J. C. Culbertson, whom they found alone and unprotected. But the worthy editor proved more of a pugilist than they anticipated, for he disarmed one of them of his weapon —a raw-hide—pommelled him over the head with it, and forcibly ejected him. His other assailant was in the meantime waited upon by the robust foreman of the printing office, who had been attracted by the uproar. A warrant was promptly sworn out by Dr. Culbertson, and the two attorneys were placed under arrest.

VIENNA.

To the Editor of THE MEDICAL NEWS,

SIR: Just now the influenza monopolizes the attention of the Vienna medical world. Everybody has had it, the hospitals are filled with its victims; of the American colony eighty per cent. were sick, or are so now—the royal family, the professors and students succumbed; so many of the latter that lectures were suspended.

The grandest man in the faculty here is undoubtedly Billroth, the surgeon. He is tall and well built though slightly stooping, has a fine head, with a large aquiline nose and clear eyes, with rather heavy eyelids. Scanty white hair makes his forehead seem very high, and a great flowing white beard conceals the lower half of his face. He speaks in a rather low tone, but every sentence is clearly cut. On the first of May, 1889, he celebrated his sixtieth birthday, and received a grand ovation from the city as one of its most honored citizens.

His clinic room is small, seating about 250 students very uncomfortably. The operating space is 15 x 25 feet and rectangular; in it are two tables, for the number of patients is so great that often while Billroth operates at one table the assistants work at a minor case at the other. Laparotomies are of daily occurrence, and on one morning I saw an echinococcus of the liver removed, a strangulated hernia liberated, a uterine fibroid excised by the Briesky method, and an ovarian cyst taken out.

Dr. Zeman, the great favorite of Americans in Vienna, who has given most excellent courses in gross pathology to classes made up of foreigners only, leaves his position as first assistant to the chair of pathology in March. He will take charge of two suburban hospitals.

The clinic of Professor Nothnagel on internal medicine is also a favorite one, but the professor is now very ill from an attack of influenza complicated by pneumonia.

Although Nothnagel is one of Europe's highest authorities on brain lesions, even he makes mistakes. He recently showed a case in which all the symptoms of *meningitis suppurativa* were well marked, yet the post-mortem proved it to be a venous varix in the optic thalamus. Another case that he demonstrated as progressive paralysis, on dissection was found to be an abscess in the parieto-occipital region. In the case of venous varix Nothnagel stood at the post-mortem almost sure of verifying his diagnosis, but when Professor Kundrat removed the calvarium and everything looked normal, Nothnagel was greatly surprised. On the next day he gave a brilliant lecture on the uncertainty of diagnosis.

In the treatment of pleuritis they are very partial here to dry cups. In Nothnagel's clinic the cups are placed over the seat of the disease early in the case, and they greatly diminish the pain and make healing more easy. For large effusions, that are known to be serous, the "Thirst Treatment" has found considerable favor. The patient gets nothing but dry food, dried bread, smoked meat, etc,, so that he receives as little water as possible. He become very thirsty at first, but soon becomes somewhat accustomed to the diet. On the first day his urine is quite scanty, but on the third or fourth it increases and the exudation in the pleural cavity grows rapidly less, all the tissues yielding their moisture, but those in a pathological state yielding up the greater portion.

That rare disease, *actinomycosis*, is quite common in Professor Albert's surgical clinic, for in the past four months he has shown more than a dozen cases. In most of them it was localized as an abscess on the lower jaw, but in one case there were several large abscesses in the liver, there had been perforation into the lung and large quantities of pus were expectorated. The spleen was also involved and the patient finally died of peritonitis. The lumbar vertebræ were filled with little nests of the germ, and there was no healthy organ in the body except the heart. The diagnosis is easy, for in the pus from an actinomycotic abscess, hard granules as large as a grain of sand and greenish in color can be found; on microscopic examination they present "the appearance of a wheel with from twenty to forty spokes." The treatment must be heroic, for after the alimentary canal has been infected the prognosis is fatal. In every case of suspicious abscess the pus is examined carefully for the germ.

Three excellent docents were promoted to professorships at Christmas time—Professors Lorenz, Maydl, and Fritsch. Lorenz has long been an authority on orthopædic surgery, Maydl is the surgeon of the Policlinic and a most skilful operator, while Fritsch is less well known. Lorenz and Maydl are both former assistants of Professor Albert.

There are about a hundred American physicians in Vienna at the present time and several homœopaths. Many courses in gynecology, surgery, and ophthalmology are given in English for their special benefit, and most of the docents and assistants speak English. Foreigners work principally with the docents and assistants, as these may give practical courses for advanced men, while the professors have time for nothing but the regular lectures for students. Thus we get into the wards and examine the patients in their beds, while the Austrian student rarely comes to the bedside. For this instruction and practice we pay about forty cents an hour, although we always have another hour before the docent comes in, to examine and thoroughly study the cases.

There is so much pneumonia prevalent here now, and so much pleuritis that differential diagnosis is at times almost impossible, and the professors are now investigating the value of urinary analysis in the differentiation. They place considerable importance upon the amount of chlorides in the urine, and in many cases make the

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diagnosis depend almost wholly on the nitrate of silver reaction.

Professor Kaposi, the dermatologist, still adheres to the theory that lupus is non-tuberculous. He spends an hour each term trying to prove that the bacilli found in lupus get there accidentally, and that they are rarely found. He undoubtedly has remarkable success in the treatment of lupus, for he removes each little nodule by a sharp spoon, and though he does not believe it tuberculous he treats it as though it were. He shows twenty or thirty cases of *lupus vulgaris* every week. He also has a case of leprosy which has been in the hospital for many years, mingling with all the patients, and this certainly proves that the dread disease is non-contagious, for no other case has been discovered here in all that time. This poor man is indeed an awful sight; his eyes are gone, his fingers are mere stumps, his face looks like that of a corpse which has been in the water for a week, and all his movements are slow and trembling. Great numbers of scabies cases are treated here, and Kaposi's favorite prescription gives excellent results:

℞.—Adeps	100 parts.
Sapon. virid. . . .	50 "
Naphthol	15 "
Cretæ alb. pulv. . . .	10 "

Apply very thoroughly over the entire affected area, and rub it over the rest of the body also. One application generally suffices and no bath is necessary as preliminary treatment. The patient is not washed for a week, and at the end of that time a cure is almost certain.

NEWS ITEMS.

The Mott Memorial Library.—From a circular sent out by the Secretary of the New York State Medical Association, we learn that the Society has joined interests with the Mott Memorial Library. The coalition brings together about 13,000 volumes at No. 64 Madison Avenue, a locality that will be convenient for the seven hundred members of the Association, when in New York City. An effort will be made to secure the services of a librarian as soon as possible, in the belief that in proportion as the books already owned can be utilized, there will be a constant and growing flow of volumes to the Library.

Surgery on a Sick-bed.—Dr. Hulse, of Bay Shore, Long Island, is reported to have performed a surgical operation on a patient while himself sick in bed. The incident, as described by the injured patient, shows that men of heroic mould are not wanting. A young man shattered his left hand by the accidental explosion of a shotgun. He was temporarily cared for at a life-saving station, and then conveyed across the bay to Bay Shore, and to the house of Dr. Hulse, who was at the time suffering from pneumonia and confined to his bed. Messages were sent out to the other physicians of the neighborhood, but none of them could be secured for the immediate treatment of the wounded man. The wound was judged by Dr. Hulse to demand an amputation of the hand without delay. He accordingly directed that the patient be placed across the bed on which he himself lay, and, being bolstered up with pillows, proceeded to amputate the hand and dress the wound. The sick physician was suffering acutely during the operation.

New Appointment.—Dr. Frank Ferguson, Pathologist to the New York Hospital, has been elected Professor of Pathology in the New York Post-Graduate Medical School and Hospital.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 11 TO FEBRUARY 17, 1890.

SMITH, JOSEPH R., *Lieutenant-Colonel and Surgeon.*—Is granted leave of absence for twenty days, to take effect about February 10th.—Par. 1, *S. O. 15, Headquarters Department of Arizona*, February 8, 1890.

By direction of the President, LOUIS W. CRAMPTON, *Captain and Assistant Surgeon*, is detailed as a member of the Army Retiring Board at Chicago, Ill., convened by War Department Order dated November 18, 1889, published in S. O. 269, A. G. O., November 18, 1889, from Headquarters of the Army, vice Henry McElderry, Major and Surgeon, hereby relieved.—Par. 9, *S. O. 36, A. G. O.*, February 12, 1890.

By direction of the Secretary of War, the retirement from active service, on February 9, 1890, by operation of law, of ANDREW K. SMITH, *Colonel and Surgeon*, under the provisions of the Act of Congress approved June 30, 1882, is announced. Colonel Smith will proceed to his home.—Par. 1, *S. O. 34, A. G. O., Washington, D. C.*, February 10, 1890.

By direction of the Secretary of War, leave of absence for two months is granted HENRY R. TILTON, *Major and Surgeon*, to take effect upon his being relieved from duty at the U. S. Military Academy, West Point, New York.—Par. 6, *S. O. 34, A. G. O., Washington, D. C.*, February 10, 1890.

By direction of the Secretary of War, the extension of leave of absence on surgeon's certificate of disability, granted LEONARD Y. LORING, *Major and Surgeon*, in S. O. 268, November 16, 1889, from this office, is still further extended two months, on surgeon's certificate of disability.—Par. 7, *S. O. 34, A. G. O., Washington, D. C.*, February 10, 1890.

By direction of the Secretary of War, CHARLES R. FLETCHER, *Lieutenant-Colonel and Surgeon*, is relieved from duty as Examiner of Recruits in New York City, and will report to the commanding general Division of the Atlantic, for duty as Attending Surgeon in that city.—Par. 1, *S. O. 33, A. G. O., Washington*, February 8, 1890.

By direction of the Secretary of War, HENRY MCELDERRY, *Major and Surgeon*, is relieved from duty at Fort Wayne, Michigan, and will report to the Superintendent of the U. S. Military Academy, West Point, New York, for duty as Post Surgeon, relieving Henry R. Tilton, Major and Surgeon, who, being thus relieved, will report in person to the commanding officer, Fort Wayne, Michigan, for duty at that station.—Par. 13, *S. O. 33, A. G. O., Washington, D. C.*, February 8, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING FEBRUARY 15, 1890.

BATES, N. L., *Medical Director.*—Ordered to the Naval Hospital, Mare Island, California.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVI. SATURDAY, MARCH 1, 1890. No 9.

ORIGINAL LECTURES.

LESIONS OF THE CAUDA EQUINA.

Hæmorrhage into the Cauda Equina. Fracture of the Spine with Hæmorrhage into the Cauda Equina. Fracture of the Spine with Hæmorrhage into the Lumbo-sacral Spinal Cord and Cauda Equina.

A Clinical Lecture,
delivered at the Philadelphia Hospital, November 23, 1889,

BY CHARLES K. MILLS, M.D.,

NEUROLOGIST TO THE PHILADELPHIA HOSPITAL; PROFESSOR OF DISEASES OF THE MIND AND NERVOUS SYSTEM IN THE PHILADELPHIA POLYCLINIC.

TO-DAY your attention will be directed to three cases of injury of the lower part of the vertebral column, the lesions in all affecting the leash of nerves called the cauda equina. A glance at a specimen of the back bone with the spinal cord and its nerves in position, shows the considerable length of the portion of the canal in which the cauda equina hangs—six inches at least. This is one of the best protected spaces in the human body. The spines, arches, and bodies of the vertebræ are of greater bulk and strength than elsewhere, and dislocations and fractures of the vertebræ can only result from the application of a great crushing, twisting, or rending force. Injuries to this part of the human framework, however, while not common are not extremely rare, because it is often exposed to certain accidents during the performance of heavy labor, and also because in falls from heights, or in severe blows or crushes, hæmorrhage into this region is particularly likely to occur. Occasionally also lesions of the cauda equinal space are secondary to disease or injury of the spinal column, membranes, or cord at a higher level; as the result, for example, of a fracture or dislocation, or, at least, in connection with either of these injuries, a hæmorrhage may take place in the dorsal cord, and the blood find its way down the smooth intra-spinal spaces to the lowest and widest portion of the canal; or, an inflammatory process may extend along the membranes to the cauda equina.

Comparatively little attention has been paid to traumatic or other lesions of the cauda equina until the last two or three years. Cases have been reported from time to time, a few with post-mortem records. Not a few of the cases without autopsies which are to be found in surgical literature, evidently examples of affections of the cauda equina, are reported under other names, as, for instance, concussion and myelitis. The most systematic and valuable papers on this subject are those of Thorburn,[1] of Manchester, England. In this country Osler[2] has reported a few cases of disease or injury to the conus medullaris or cauda, and I have also put on record two or three traumatic cases.[1] In the papers of Thorburn the literature of the subject has been collected, but it is meagre.

Diseases and injuries of the cauda equina have both a scientific and a directly practical interest. Their study throws light upon some questions in sensory, motor, trophic and visceral physiology; as, for example, the exact cutaneous and muscular distributions of certain nerves, and the position of anal, vesical, sexual, or other centres in the spinal cord. They are, in fact, often excellent experiments for determining the functions of spinal segments and nerves. Practically they are of great importance for diagnosis, prognosis, and treatment. Some of the problems of diagnosis will be treated of after the presentation of the cases. As regards prognosis, while some of the cases are of the greatest possible seriousness, resulting fatally or causing extensive and permanent paralysis, others which at first have an entirely hopeless appearance make partial and occasionally almost complete recoveries. One question in the treatment of these cases is whether or not trephining should be performed, a problem by no means easy to decide. Thorburn advocates operation in most cases. On the one hand we have a region of the spinal column chiefly containing nerves, and not the more vital and delicate cord, and, therefore, operation offers considerable hope and is less dangerous. On the other hand, however, cases apparently desperate and hopeless at first, under rest, absorbents, electricity and time, make such approximate recoveries as to throw doubt upon the value of active surgical interference. The cases which will be presented this morning illustrate both sides of this problem of prognosis and treatment. Two of them have made partial recoveries from conditions of almost complete sensory and motor paralysis, although they are by no means entirely relieved from suffering and disability. The third case is one in which injury, probably a fracture, accompanied or followed by hæmorrhage, has left the patient in a hopeless condition of paralysis and suffering, and is probably one in which if operation had been early performed, much of this misery and helplessness might have been saved.

The first patient I bring before you, as you see, walks about with some spryness, but has a peculiar, limping, thumping gait, the motor defect which causes it being seemingly more marked in one limb than the other. The following are the notes of his history:

CASE I. *Hæmorrhage into the cauda equina from traumatism: involvement of certain sacral nerves; marked anæsthesia in the distribution of the small sciatic, pudic, inferior hæmorrhoidal, and inferior pudendal; imperfect anæsthesia in other areas; paralysis in some of the muscles from the sacral segment: vesical and anal symptoms; great improvement.*—M. H., aged forty-four,

[1] Brain, January, 1888, and Medical Chronicle, April, 1888.

[2] THE MEDICAL NEWS, December 15, 1888, and Journal of Nervous and Mental Diseases, August, 1889.

[1] Therapeutic Gazette, May and June, 1889.

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white, born in Ireland, a laborer, in August, 1887, while carrying a hod, fell from a scaffold twenty-five feet from the ground, and landed on his feet. He broke no bones, but could not walk. He was taken in an ambulance to the German Hospital, where he remained four months. For the first fifteen hours he is quite sure he had normal sensation in his legs, which he could also move up and down without difficulty, but during this time he had great pain in his back, especially when he attempted to move. He also had pain in the pelvis and in the upper gluteal regions. After fifteen hours he began to have pains and cramps in the left foot and leg, which were drawn. The leg also became swollen and blue. The right leg then developed the same symptoms, and both were drawn up and swollen, and blue to the hips. This condition made him practically helpless; his legs had to be lifted about when a change of position was desired.

His limbs began to improve, and they are now very much better. After the first fifteen hours he had incontinence of urine, and has been troubled with this ever since to a greater or less degree; now but slightly. For the first six months his bowels were constipated or torpid, and since that time he has suffered at times from incontinence of fæces. A tingling sensation is felt in the legs, most marked in the calves, posterior part of the thigh and buttocks, and in the left leg. In this leg he also has at times the sensation of a small stream of water flowing down the inner side of the thigh and leg. The knee-jerk is exaggerated in both legs. He says that both of his legs increase in size at times, and that the tingling sensations also are sometimes worse. He suffers sometimes from vertigo, particularly in the afternoon, but otherwise, he says, he is particularly well. His legs are not atrophied. On the posterior aspect of each thigh is a limited area of complete anæsthesia, represented in Fig. 1. The defective sensation is over the posterior central portion of the upper thigh, and the gluteal and sacral regions. It also extends to the perineum, scrotum, and penis, as shown in Fig. 2.

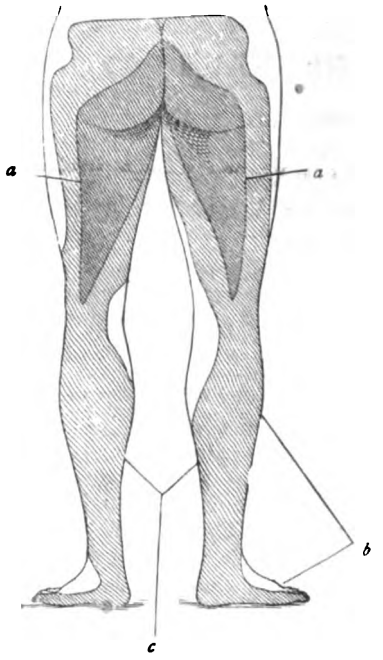
Let us now examine with some closeness the present condition of our patient as to motion, sensation, the state of his bladder, rectum, etc. He has fairly good use of his limbs, and is now working about the hospital. He uses his sartorius, quadriceps, abdominal, and pelvic muscles well. He also has control of his hamstring or flexor muscles. Proceeding below the knee, the first weakness is found in the gastrocnemius, soleus, and posterior tibial. The anterior tibial movement is also impaired. He has a limited defect in the movement of certain muscles of the left foot, the right showing a similar but better condition.

This examination of the patient for motor paralysis shows that the loss which is now present is chiefly dependent upon compression or destruction of the nerves which go from the sacral spinal segments, with very likely also involvement of the nerve-fibres proceeding from the fourth lumbar segment. This conclusion will be confirmed by an examination of the following table of the segmental representation of muscles from the fourth lumbar segment downward:[1]

Fourth lumbar segment: Abductors of thigh, adductors of thigh, flexors of knee, tibialis anticus, peroneus longus.

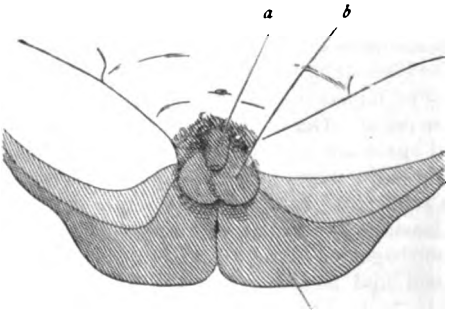
Fifth lumbar segment: Outward rotators, flexors of knee, flexors of ankle, peronei, extensors of toes.

FIG. 1.



a. Small sciatic.
b. Ext. saphenous.
c. Int. long saphenous, branch of ant. crural.

FIG. 2.



a. Dorsal nerve of penis, branch of inf. pudic. Superficial cutan. perineal.
b. Superficial cutaneous perineal, branch of inf. pudic. Inf. pudendal, branch of small sciatic.

First and second sacral segments: Flexors of ankle, extensors of ankle, long flexor of toes, intrinsic foot-muscles.

Third, fourth, and fifth sacral segments: Gluteus maximus, perineal, muscles of the bladder, rectum, and external genitals.

Fifth sacral and coccygeal segments: Coccygeus muscles.

As already indicated, the movements most affected are those about the ankle, particularly extension of the foot, chiefly performed by the gastrocnemius and its

[1] From paper on Spinal Localization, Therapeutic Gazette, May and June, 1889.

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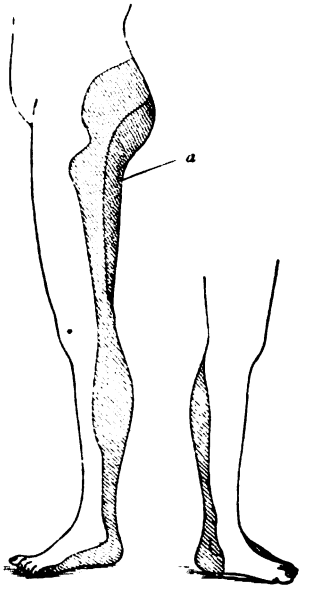
associated muscles. Other movements of the toes are weakened. These movements are governed mainly by the sacral segments of the cord. Evidently the nerves which escape from the spinal canal lowest down are the most affected. Thorburn regards it as established that in a pressure lesion of the entire cauda equina, those nerve-roots which emerge lower down are more seriously injured than those above them. In a case of hæmorrhage into the cauda-equinal space, this is what might be expected from the settling of the blood.

Dr. Rosenau, one of the internes of the hospital, who studied these cases carefully with me during his term of service, has made several diagrams of this case which show the areas of loss and defect of sensation. They show back and side views of the patient, and also views of the external genitals, perineum, and adjacent region (Figs. 1, 2, and 3). They show by dark and lighter

FIG. 3.



a. Small sciatic.

shading that in certain areas the loss of sensation was absolute, while in others it was partial, and both the absolute and partial areas of anæsthesia illustrate the distribution of certain sensory nerves which are close together in the cauda equina, almost as clearly as they could by an experiment in which some of these nerves were completely severed, while others were partially cut or compressed.

The following, from my table[1] of the "Localization of the Functions of the Spinal Cord," shows the cutaneous areas, and also the names of the nerves corresponding to the different spinal segments, from the third lumbar downward to the termination of the spinal cord:

Third lumbar segment: Front of thigh. (Middle cutaneous, internal cutaneous, long saphenous, obturator.)

Fourth lumbar segment: Inner side of thigh, leg, and foot. (Internal cutaneous, long saphenous, obturator.)

Fifth lumbar segment: Back and outer side of leg, sole, dorsum of foot. (External popliteal, external saphenous, musculo-cutaneous, plantar.)

First and second sacral segments: Back and outer side of leg, sole, dorsum of foot. (Same as fifth lumbar.)

Third, fourth, and fifth sacral segments: Back of thigh, anus, perineum, external genitals. (Small pudic, inferior hæmorrhoidal, inferior pudendal.)

Fifth sacral and coccygeal segments: Skin about the anus and coccyx. (Coccygeal.)

A study of this table in connection with the examination of this patient, shows the nerves affected to be some of those given off from the fifth lumbar to the coccygeal segment. The area of complete anæsthesia and analgesia is that supplied by the small sciatic, pudic, inferior hæmorrhoidal, and inferior pudendal nerves, which arise from the lower part of the sacral plexus and from the lowest segments of the spinal cord (Figs. 1 and 2). The area of incomplete anæsthesia is mostly in the distribution of the external and long saphenous nerves. Generally speaking, the sensory nerves which escape belong to higher segments of the cord than those which are involved, the exception to this being the partial involvement of the long saphenous which comes from the third and fourth lumbar segments.

It is now pretty generally conceded that the ano-vesical centre in man is situated in the lowest segments of the spinal cord, and this case, and, indeed, the others which I will presently examine before you, confirm this view. The swelling and the blueness of the limbs were vasomotor affections connected with the nerve injuries. The pains which he suffered after the accident were, doubtless, from direct irritation of the nerve trunks by the lesion. This patient shows no external deformity as the result of his injury. If a fracture occurred at all, it must have been without displacement, and, on the whole, the probabilities are that the case is one of hæmorrhage.

Briefly reviewed, we have the history of an injury resulting from a fall from a height with a sudden loss of power in the legs. He had at first little loss of sensation, although after fifteen hours it became much greater than is now present. He had also immediately after the injury great pain in the back, shooting thence down the limbs and toward the pelvis and the perineum. Paralysis, anæsthesia, and shooting pain were then his symptoms, moderate in degree at first, and in fifteen or twenty-four hours increasing in severity, showing that probably the hæmorrhage which occurred at the time of the injury had been followed by an additional flow of blood in a few hours. He also had symptoms showing an involvement of his bladder and rectum—namely, incontinence of urine and fæces. We find no indication of a lesion high up in the cord. As we can pick out the exact sensory and motor nerves affected, we learn the exact height of the lesion in the spinal canal, and the nerves affected in their intra-spinal course.

As far as treatment is concerned, on the whole, it was wise to let him alone at first. He had no sign of external injuries. It was probably a purely hæmorrhagic case, and in trephining we would have done so only for a hæmorrhage. It might have been well to have done this, aspirating the blood, and so have prevented degeneration of the nerves from compression; but now it would not be worth while. Possibly if he had been

[1] Op. cit.

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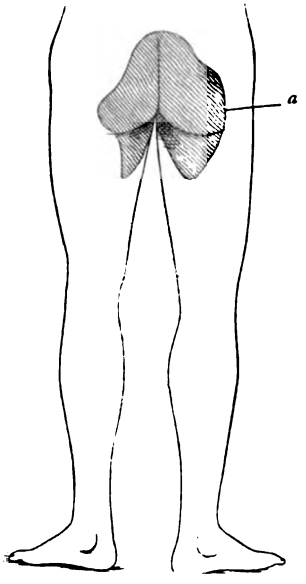
trephined, he might have been in a better condition than he now presents, but still a conservative surgeon would probably not have operated in such a case.

CASE II.—*Fractures of the spine and posterior vertebral arch, with probable hæmorrhage into the cauda equina. Sensory and motor symptoms similar to Case I., but less marked.*—T. C., twenty-six years old, while working on a railroad was, with two other men, crushed by a truck loaded with coal being thrown backward upon him. At once he had tingling and numb sensations in his legs, and could not sit nor stand. For about fifteen or twenty minutes he could move his legs, but had loss of power and sensation in them. About four hours after the accident he began to have pain shooting from the sacrum down both legs. He was four months in bed, unable to stand or walk, but gradually recovered power in the legs, and at the end of that time could stand by holding on to a chair; since then he has been gradually getting better. If constipated, he is compelled to remove the fæcal mass mechanically, but if his bowels are loose he has loss of control over them. He uses the catheter, and if he is careful there is no dribbling. When the bladder is full he can pass some urine voluntarily. The dribbling is from overflow, the paralysis appearing to be rather of the bladder walls than of the sphincter. Sexual power and inclination are diminished but not lost.

FIG. 4.



a. Small sciatic.

This case presents features almost identical with those shown by Case I., only the amount of damage to the cauda equina is less, as shown by the narrower area of complete anæsthesia (Fig. 4). No area of imperfect sensation surrounds that of total anæsthesia.

He has little loss of power in his legs, though, as he says, his left leg thumps a little in walking. At first completely paralyzed, he has now only a slight loss of power in his left foot. The little trouble remaining is mainly in his ankle extensors, which are represented low in the sacral segments. We have here then the same sort of lesion as in the other case. He has, however, a very visible deformity on his back, the result of the injury in about the position of the first lumbar spine. He probably suffered a fracture, not of the bodies of the vertebræ, but of one or two posterior arches and spines, which were driven in and somewhat over, thus causing deformity. A hæmorrhage may also have occurred at the same time, and have found its way down into the cauda equina, although this is uncertain. It is possible that this fracture is still allowing bone to press upon the conus or nerves, thus giving rise to the symptoms. Trephining here offers some hope of improvement for his ano-vesical, sexual, and sensory symptoms.

The third case is much more serious in its nature than either of the other two, and trephining should have been performed at once.

CASE III. *Probable fracture of the spine with hæmorrhage into the lumbo-sacral spinal cord and cauda equina; marked anæsthesia in the distribution of the sensory nerves from the fourth lumbar to the coccygeal segments; almost complete paraplegia in the muscles supplied from the third lumbar segment to the extremity of the conus; advanced vaso-motor, trophic, and electric changes.*—K. M., aged sixty, born in Ireland, a domestic, two years ago fell from a shed and injured her spine, immediately losing power in the lower limbs, and having sharp pains radiating round the abdomen. We will not go into a detailed examination of this case, but will give briefly the results of examination. The patient presents complete motor paraplegia of the lower extremities with foot-drop. Knee-jerk is abolished, and sensation much impaired. The bladder and rectum are paralyzed. The skin is glossy. There is sensitiveness to pressure over the upper lumbar spine. Examination shows a large curvature of the back with projection beginning about the sixth dorsal vertebra and reaching to the sacrum. The left side of the back from the sixth dorsal down has a bulging appearance. She complains of tenderness all along the spine below the second dorsal vertebra. It is a question how far the curvature is angular from vertebral disease, and how far muscular due to abnormal positions. She has considerable power to twist and move the trunk in spite of the deformity. She does not present any indication of caries. The limbs are wasted and mottled, and are much colder than they should be. The nails are brittle and show bad nutrition. Faradic and galvanic contractility are abolished in most of the muscles of the lower limbs. Here are diagrams showing her condition as to sensation. (Figs. 5 and 6.)

As you see, her legs can only be moved a little above the knee, and not at all below. She has some power in the pelvic muscles. As to sensation, the loss is almost absolute below the knee anteriorly; behind one can pass all the way up the thigh without finding any sensation, provided in the popliteal region we keep within a narrow isthmus. The genitals and the same regions of the buttocks and thighs are anæsthetic, as well as the coccyx and anus, as in the other cases. We have here, then, an involvement of all the motor and sensory sacral nerves, and to some extent those of the lumbar segments, with accompanying vaso-motor, trophic, and electrical changes, the result of a fracture of the spine above the sacral segments over the conus, or of a crushing of the whole lumbo-sacral portion of the spinal cord.

These cases, as already stated, present points of great

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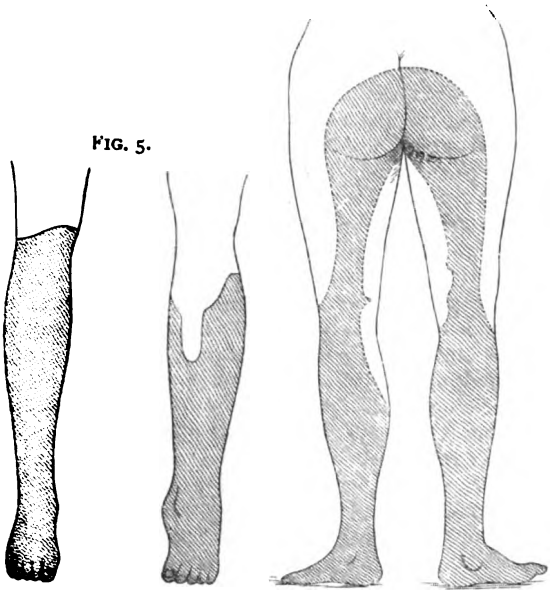
interest for diagnosis, both local and general. Thorburn gives injury or disease of the lower part of the cord, extra-spinal nerve disease and injury, and locomotor ataxia as the diseases and conditions from which injury or disease of the cauda equina is to be differentiated.

FIG. 6.

FIG. 5.



If we bear in mind the definite physiological symptoms—the circumscribed cutaneous areas of loss of sensation, the exact muscles and muscular groups paretic or paralyzed, and the peculiar involvement of the bladder, rectum, and genitals, the matter of diagnosis will be greatly simplified. Myelitis must be distinguished by its history, and by the peculiar distribution of the loss of sensation and motion characteristic of that disease This is, however, a difficult diagnosis, if the myelitis attacks the lowest portion of the cord.

Thorburn[1] speaks as follows of the diagnosis from injury or disease of the lower part of the spinal cord: "Here we must be guided by the exact site of the local symptoms, if any be present, remembering that the cord does not extend below the lower border of the first lumbar vertebra. Also, if the cord be there injured, there will probably be some anæsthesia or hyperæsthesia of the last dorsal or first and second lumbar nerves; and again we may expect more rapid trophic lesions than in injuries of the cauda. If the symptoms be asymmetrical, we have probably to do with an affection of the cauda rather than of the cord. Whether in a partial crush above the level of the last dorsal vertebra, the damage down to the anterior crural nerves bears the same relation to that done to the sciatics, as in a crush lower down, I have at present no evidence to determine."

Disease or injury of the nerves or nerve plexuses outside of the spinal canal—lumbar or sacral—might sometimes be confounded with affections of the cauda equina. Thorburn says that the only disease of this kind liable to be mistaken for an affection of the cauda equina is some variety of multiple neuritis, and that we may usually decide the point by finding some affection of the upper limbs, by the marked preference of that disease for the extensor surfaces, and by the slighter sensory symptoms. Some of the affections to which I have called attention in a paper on "Lesions of the Sacral and Lumbar Plexuses,"[1] might occasionally be confused with disease of the cauda equina. These affections are neuritis, neuromata, non-neural growths implicating nerves, caries, abscesses, gunshot and other injuries, and rectal, ovarian, or even uterine disease. Usually these affections are unilateral, and this fact will serve to separate them from lesions of the cauda equina. Bilateral lesions of the sacral plexuses, such as neuritis, paralysis from labor, and tumors in both pelvic cavities sometimes occur. In some of these cases close examination by the rectum will be of great assistance. Unilateral affections of the cauda equina, while conceivable, are exceedingly rare.

It would hardly be thought probable that locomotor ataxia, of which disease our knowledge is now so full, could be confounded with the affections under consideration, and yet within a few weeks I have seen in consultation a patient in whom this mistake was made. This patient was a man between sixty and seventy years of age, a free liver, who sixteen months before coming under my observation had a slight cerebral apoplectiform attack, probably a small hæmorrhage. From this he recovered rapidly. One year later he was taken suddenly with severe pain in the lower part of his back, which lasted for several days, and left him paralyzed, both as to sensation and motion, in both his legs. He also had sharp, shooting pains coming and going in various parts of his legs. He was confined to his bed for nearly three months, all the time slowly improving. His bladder was affected from the first, the urine dribbling nearly all the time. His rectum was also paralyzed. When examined by me his symptoms were very similar to those presented by the patients we have studied this morning. His left leg was almost completely paralyzed below the knee, his muscles showing the reaction of degeneration. The right leg was paretic, all movements being preserved, but nearly all deficient. He had absolute loss of sensation in the distribution of the small sciatic, pudic, inferior hæmorrhoidal, and inferior pudendal nerves, with also loss of sensation below the knees, similar to Case III., although not as complete. He had a sprawling, halting, clumsy gait, somewhat like that of an ataxic, and he complained of feeling as if he was walking or sitting on gum. Several physicians had regarded the case as one of locomotor ataxia. It certainly bore all the marks of a hæmorrhage or tumor of the cauda equina, probably the former, owing to the rapidity with which the symptoms developed. The diagnosis in this case and in others is to be made by a careful consideration of both history and symptoms. The simulation of posterior spinal sclerosis is coarse and not likely to deceive on careful examination. The history of sudden onset, whether following injury or not, would be in favor of an affection of the cauda equina. While locomotor ataxia is sometimes the result of injury, the disease does not develop abruptly. The pains of locomotor ataxia are more irregularly distributed and

[1] Brain, January, 1888, p. 403.

[1] THE MEDICAL NEWS, June 15, 1889.

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have usually gradually increased, both in severity and extent, over a long period. In locomotor ataxia the loss of sensation or the retardation of sensory conduction is usually bilateral and not generally so complete. In lesions of the cauda equina we have, as shown by these cases, clearly defined areas of loss of sensation according to the nerve or nerves involved. Pupillary and other ocular symptoms, gastric crises, and generally symptoms above the waist, are entirely absent. Reaction of degeneration is present in disease of the cauda equina, and close examination shows true paralysis of certain muscles, while the apparent or real incoördination, when present, is the result of defective sensation in the feet. When diseases and injuries of the cauda equina have been brought sufficiently before the profession this mistake will not often be made.

FISSURE OF THE ANUS.
CONGENITAL STRICTURE OF THE RECTUM.

A Clinical Lecture
Delivered at the New York Post-Graduate Medical School and Hospital.

BY CHARLES B. KELSEY, M.D.

GENTLEMEN: While waiting for the case with the consideration of which most of the hour will be needed to-day, I will operate upon this typical fissure of the anus. The patient gives the usual history of pain after stool, and an examination shows first a painful cutaneous tag, the size of a pea, at the verge of the anus; and, beginning at the upper limit of this, a granulating ulcer, the size of the finger-nail, running up into the anus.

The usual way of curing this affection is to dilate thoroughly the sphincter. This is radical, but in common charity it demands the administration of an anæsthetic, and conveys to the patient all the horror of an operation. To show you that this is not necessary, I will inject a few drops of cocaine under the ulcer, entering the needle in the skin and passing it forward till its point is at the level of the centre of the sore. After time has elapsed for this to take effect a speculum is introduced, more to show you distinctly the extent of the disease than because it is necessary for the operation, and a sharp knife is drawn longitudinally through the fissure. The external tag is then cut off with the scissors, there is free bleeding for a moment, easily controlled by pressure, the speculum is withdrawn, and the patient given some compound licorice powder to take nightly and told to report day after to-morrow.

In making this incision the only point is to enter the knife above the margin of the ulcer and end the cut below it, taking care to divide those fibres of the external sphincter which form the floor of the fissure. No division of the whole body of the muscle is necessary.

This is an operation any of you may practise in your office; it is free from danger, and it accomplishes, when properly done, all that can be gained by forcible dilatation, the patient being relieved of the characteristic pain of the affection from the moment of the incision.

CONGENITAL STRICTURE OF THE RECTUM.

The next patient, as you will see, is a little boy of four years, seemingly well nourished and presenting nothing unusual in his appearance; and yet when I tell you that, according to the statistics of the largest lying-in asylums, children suffering as he does are only born in the proportion of 1 to 25,000, you will observe him with a good deal of interest. These figures are perhaps as correct as any we are likely to get, but the condition is so rare that any attempt at statistics is apt to be useless.

The child's mother tells us that he has always been constipated, has never been able to have a passage from the bowels without great straining, and when she brought him here three days ago he had had no passage at all for four days. He was also vomiting everything, though this may have been due to the frequent doses of castor oil which had been administered without other effect. The vomiting does not seem to have been stercoraceous, as far as can be judged from the description of the ignorant mother.

We first strip the child and find the abdomen distended, hard, and resonant on percussion, the thoracic viscera crowded upward. There is no accumulation of solid fæces to be made out, nor is such to be looked for in a child of this age. Evidently the patient is suffering from intestinal obstruction in some form, and the most natural thing to do is to make a rectal examination. The anus is found to be perfectly normal, as you see. Oiling the little finger and passing it into the rectum, we meet at one and a half inches an insuperable obstacle. As the child cries and bears down with the fear of the examination, the finger is pressed against by a round, globular mass, seeming to fill the pelvis. As he expires freely the mass disappears, but still the finger cannot be passed any higher than before. Careful search with the tip of the finger reveals a small depression nearer the anterior than the posterior wall of the gut, but the end of the little finger cannot be made to enter it—indeed, can scarcely be sure of its existence, so slight is it. On withdrawing the finger, there is a free jet of fluid fæces for several inches from the anus, showing that even this slight dilatation of the opening, combined with pressure from above, has given escape to this amount of pent-up fæcal matter.

The diagnosis is thus made complete by a simple digital examination, and it is not too much to say that any practitioner treating this child by cathartics without such an examination as you have seen, would be guilty of criminal carelessness.

Before calling attention to the treatment of this case, I wish to dwell a little on its etiology, and the various forms of the affection which may be met.

In early fœtal life the pelvic portion of the primitive intestine terminates in a *cul-de-sac*, in common with the urachus. At about the eighth week the perineum is formed, dividing this cavity into the uro-genital sinus and the anal cavity. In the meantime, and at a much earlier period, a depression has formed in the skin at the site of the anus, which deepens till it encounters the primitive intestine, and union is established between them at about the end of the fourth week. The upper part of the rectum is thus developed from the internal and middle layers of the blastodermic membrane, while the lower is formed by the middle and external layers.

This normal development may be arrested at almost any part, and hence result the different varieties of congenital malformations, not only of the rectum but of the

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genito-urinary tract. These may best be studied in the following groups:

1. Narrowing of the anus or rectum without complete occlusion.

To this group our case of to-day belongs. The narrowing may be more or less slight, sometimes causing only little disturbance, or again, as in this case, amounting to almost complete occlusion. This child would have died long since had this narrowing been a little higher up the bowel. As it is, the part of the rectum in which the stricture occurs being low down is comparatively fixed, and when the child brings all its muscular power to bear in effecting a passage, the bowel cannot by bending escape from the direct line of pressure, and more or less relief is the result as long as the fæces are fluid and there is any opening at all.

Where the opening is large enough to admit of a free passage during early life, no symptoms may be caused till the patient reaches maturity. In the only other case of this form of congenital malformation I have seen, the patient was a strong, healthy man of thirty-six, who had been well all his life up to the time he consulted me. He had always been constipated, had never known what it was to have what other men would consider a natural stool; but at about the age of thirty-five he began to find his constipation, and consequent straining, increasing, which led him to consult a physician. This, by the way, is not an unusual history in these cases, for while the youth is growing to adult age the soft parts are elastic and distensible, but when adult life is reached the elasticity begins to decrease, and the fibrous band makes itself more strongly felt as each year passes.

The stricture in this child is not caused by anything resembling a membranous diaphragm growing across the lumen of the bowel. It is nothing that can be cut across as a membrane might be, and which would then shrivel up. On the contrary, the bowel is in the same condition that it would be had a piece of tape been tied tightly around it so as to reduce its calibre to the size of a filiform bougie, and any cutting operation must, to give relief, involve the complete thickness of the rectal wall and reach into the surrounding cellular tissue.

2. In another class of cases the anus is closed by a membrane very strongly resembling the hymen, a membrane which may be absolutely impermeable, or may have one or more small openings allowing the escape of meconium, and so thin that it can be seen to bulge on each inspiration. This is the simplest and most easily detected of all the forms of malformation, and is the most easily cured by a simple crucial incision; but, unfortunately, it is one of the rarest.

3. In the third class of cases there is no anus at all, and the rectum ends in a blind pouch at a greater or less distance from the perineum. These are easy of diagnosis also, but much more difficult to treat than either of those just mentioned; for if the blind pouch of the rectum be near the perineum, it must be reached from there and pulled down to the surface; but if it cannot be so reached, an inguinal colotomy must be done to save the life of the child.

In trying to decide whether the pouch be low enough to be reached from the perineum, a vaginal examination may be of great assistance, as in a female child fluctuation may be detected in this way with one hand over the symphysis and the finger in the vagina, and in a male child the same may be detected with one finger on the perineum. Resonance on percussion of the perineum, and any bulging when the child cries, are also valuable aids to diagnosis. Usually, however, an incision must be made in the perineum and the dissection carried upward for an inch into the pelvis, to decide whether or not the rectal pouch can be reached in this way.

4. In a fourth variety, the rectal pouch is the same as in the last, and the anus the same as in the little patient before us. In other words, instead of there being, as in our case, a constriction of the rectum which is still pervious to a slight degree, there is a complete absence of the rectum for more or less of what should be its course, as though two sections of an aqueduct had been properly built and the intermediate one not commenced.

Except in the cases of greater abnormality, such, for example, as entire absence of the large intestine with a fæcal fistula at the umbilicus, or in the loin or groin, all of the other varieties consist of communications between the rectum and the genito-urinary tract. The rectum either ends in the bladder, vagina, or penis, and discharges its contents through them, or the bladder, uterus, or vagina ends in the rectum, and discharge in this way. Some of these are more serious than others. The rectum may terminate in the vagina, for example, and the child grow to adult life and have children. In the male, also, it may end in a fistulous track in the penis, and the man live to middle age and be the father of a family.

But, on the other hand, when the rectum discharges its contents into the bladder, the little sufferer is usually soon carried off, unless relieved by operation, by the irritation of the resulting cystitis.

Coming now to the question of treatment, the most natural thing to do in the case before us is by some method to enlarge the already existing opening, and try to keep it enlarged. In other words, I shall, if the mother will consent, treat this stricture as I would treat any other non-malignant stricture of the rectum in an adult—first cut it freely open, and then trust to gradual dilatation to preserve the opening. The child should be chloroformed, the anus dilated, the opening found and nicked with a blunt-pointed bistoury till the little finger can be passed through, and the dimensions of the septum made out. If it prove to be thin and easily torn, I shall break it down by forcible divulsion with the finger and, after a couple of weeks, begin the steady use of bougies. If it be found hard, thick, and fibrous, I shall cut entirely through it and through the posterior wall of the bowel into the peri-rectal cellular tissue in front of the sacrum. In this case drainage must also be provided, either by carrying a drainage-tube from the incision into the bowel, out through the skin at the tip of the coccyx, which is the preferable way, or by extending the incision made into the rectal wall downward through the anus and dividing all the soft parts down to the tip of the coccyx. You may ask, why cut so much more than is necessary actually to divide the stricture? Because an incision through the rectal wall into the surrounding cellular tissue at any point, without at the same time providing free, absolutely free, drainage, is about as dangerous an incision as can be made in surgery. It is to open the lymphatics of this region to a constant supply of infective material, and then bathe them in it at all times except immediately after the bowels have been

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moved. Even the strictest antisepsis, with free drainage, will not always prevent blood-poisoning in these cases, so what can be expected without drainage?

In the treatment of the other varieties of malformations, I will only mark out a few guiding principles.

Where there is obstruction to any appreciable extent, always operate to relieve the obstruction at once. Many a life has been lost by the surgeon postponing the operation which he admits to be necessary, till he has given a purge to see whether this will not cause a bulging of meconium in the perineum to guide the knife. This is entirely unjustifiable. I came down from the mountains last summer in answer to a telegram to operate upon one of these cases, but when the surgeon in charge found I could not arrive within less than eight hours, he operated without me; and though I regretted not being present, I could not but appreciate how much better the chances were for the child than if he had waited.

Another rule is not to use a favorite instrument with many in these cases—the trocar—plunging it blindly into the pelvis in the hope of finding fluid. Remember that in the newly born the distance from the tip of the coccyx to the promontory of the sacrum is only a trifle over an inch, and that the peritoneum is much nearer the surface than this. The trocar in itself can do no good and may inflict fatal injury. Even should it reach meconium, its track must be followed by an incision, and this can be made with equal certainty without the trocar.

Where the anus is absent, it is a good rule always to search for the rectal *cul-de-sac* first, through the perineum, carrying the incision into the hollow of the sacrum at least an inch from the surface. The pouch may be reached and drawn down and fastened to the surface either at its proper point, or backward at an opening made by amputating the coccyx. If it cannot be reached in this way, an inguinal colotomy should next be done, and a sound passed down the rectum from above as a guide to the operation from below. If it be found possible with this additional guide to complete a communication from the perineum, it may be done; otherwise the perineal opening must be abandoned, and the gut stitched to the surface in the left groin as in ordinary inguinal colotomy.

Where the rectum communicates with the vagina and there is no obstruction, all operative interference may be postponed till the child has grown to adolescence, for the operation of Rizzoli can be much more easily performed then than at birth. This procedure consists, briefly, in transplanting the opening in the vagina with the sphincteric fibres which are usually present, into the perineum and fastening it to the skin at the proper point, closing the vaginal and perineal incisions by sutures.

We will now explain this case to the child's mother, and if she consents to the operation, as it is quite possible she may not do—being, as you see, an ignorant foreigner in the lowest walks of life—we will bring the child into the hospital, and operate before you at our next meeting.

Sodium Salicylate in Pruritus.—DR. WERTHHEIMER has recently treated three cases of universal pruritus with moderate doses of sodium salicylate, the intense itching disappearing within a few days in each case. The amount of the drug employed was six tablespoonfuls of a three per cent. solution, three times daily.—*Schmidt's Jahrbücher*, January, 1890.

ORIGINAL ARTICLES.

FOUR CASES OF SUPRA-PUBIC CYSTOTOMY, WITH REMARKS.[1]

BY ALBERT VANDER VEER, M.D.,
PROFESSOR OF DIDACTIC, ABDOMINAL, AND CLINICAL SURGERY IN THE ALBANY MEDICAL COLLEGE.

AT the meeting of the American Surgical Association for the year 1887, a very valuable discussion of the various methods of treating vesical calculus, and the exploration of the bladder, took place. Drs. F. S. Dennis and John H. Packard furnished two exceedingly interesting contributions on supra-pubic cystotomy, and I, myself, looked into that operation with especial interest in relation to its application in the treatment of stone, and bearing upon the paper I then presented.[2] At that time supra-pubic cystotomy was fairly reviewed, and had many eminent and enthusiastic advocates. On the other hand, the operation was very cordially condemned by others. I remember very well the statement of Dr. Agnew: "I have always said that I do not see the advantage of going on top of a house to get in, when an entrance can be had on the ground-floor." About this time Mr. Reginald Harrison had written very forcibly and intelligently on the perineal route to the bladder for the delivery of stone, and drainage for the relief of cystitis with prostatic hypertrophy. Sir Henry Thompson had also just published his monograph on tumors of the bladder, advocating the median perineal incision for their removal. These things, together with the mortality following supra-pubic cystotomy, the fear of urinary infiltration, the vexed question of drainage, etc., led me to adopt the procedure of Mr. Harrison and Sir Henry Thompson in the management of tumors and cystitis requiring drainage. My results were disappointing, and I was satisfied that we must look to supra-pubic cystotomy for more perfect results.

At the meeting of the American Surgical Association of 1888, a paper read by Dr. Hunter McGuire, on "The Formation of an Artificial Urethra in Prostatic Obstruction," made a profound impression upon my mind, and I resolved upon a wider application of the supra-pubic incision.

CASE I.—Mr. L. H., aged forty-seven, married, native of the United States, and by occupation a carpenter, entered my service at the Albany Hospital, November 26, 1889. The clinical history is as follows: Father and mother died at an advanced age; whole family very vigorous; an uncle died of cancer, and the patient himself was never strong. When a youth he was thrown from a horse, and sustained a rupture of the left testicle. Since the acci-

[1] Read at the meeting of the Medical Society of the State of New York, February 5, 1890.

[2] To what Extent can we Classify Vesical Calculi for Operation?

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dent he had always suffered from local neuralgic pain. After continued treatment, the testicle, which was atrophied, was removed, December, 1885, with complete relief. At this time he had a slight hæmorrhage from the bladder, but continued in good health until the spring of 1887, when there was a return of the hæmaturia, together with vesical tenesmus and retention of urine. This condition did not improve, and he entered the Hospital, December 28, 1887. The urine contained pus, blood, and mucus, but the kidneys seemed free from disease. The exploration of his bladder with a searcher was attended with great difficulties, and could only be accomplished under anæsthesia. An irregular mass could be made out on the left side of the bladder. On January 3, 1888, I operated for the removal of the growth. The incision for median lithotomy was made into the membranous urethra, the neck of the bladder dilated, and a mass the size of a small orange removed by the curette and forceps. The bladder was irrigated with borated solution, a full-sized catheter introduced through the perineal wound for drainage; the patient recovered with the usual after-treatment, and returned to his home. After his discharge he continued the irrigation of the bladder *per urethram*, and for a time was in a fair condition of health. However, during the summer there were slight hæmorrhages, and later his old symptoms returned. I advised that he reënter the Hospital and submit to a supra-pubic cystotomy. November 30, 1888, the operation was done. The incision was somewhat embarrassing, as the abdominal walls were very fat. The digital exploration of the bladder revealed a papillomatous mass as large as an apple on the left anterior wall of the bladder. It was removed with the finger and the curette. Hæmorrhage was very free, but was controlled by irrigation with hot borated solution. A Trendelenberg drainage-tube was introduced, and the lower portion of the wound closed. A siphon was attached to the drainage-tube and carried over the side of the bed into a vessel. An attempt was made to acidulate the urine by free administration of citric acid, thereby producing asepsis. Patient did well. Bladder was freely irrigated through the wound, with comfort to the patient. His appetite was capricious, and he remained in the Hospital for some time. The healing of the wound was somewhat embarrassed by the deposits of phosphates about the edges, with some suppuration. He returned to his home, although a slight cystitis remained, which was relieved by irrigation. He has kept me informed as to his condition, and is now, after fourteen months, free from his old symptoms.

CASE II.—Mr. D. S., aged nineteen, single, by occupation a clerk, entered my service at the Albany Hospital, April 26, 1889. Family history and previous health good. In November, 1889, the patient was seized with a chill, pain in the head, back, and pelvis, high fever, and frequent micturition. A severe cystitis followed. The urine was ammoniacal, filled with pus and mucus, and at times contained clots of blood. An attempt at irrigation caused so much distress that it could not be repeated. About this time the patient began to have attacks of vesical spasm requiring much morphine for relief. He could not assume an upright position. In this condition he was brought to the Hospital. Exploration of the bladder, either by sound or cystoscope, was impossible without anæsthesia. I advised supra-pubic cystotomy. The operation was done May 8, 1889. The section revealed a bladder free from stone, but with contracted and thickened walls. The mucous membrane was studded with tubercular masses, many of which had broken down into ulcers. The wound was partially closed with sutures, and a soft-rubber drain introduced. Spasm compelled the immediate removal of the drain. Hypodermic injections of distilled water would at times relieve the pain. Bladder was washed out with borated solution; his appetite improved, he gained in strength, and returned to his home in the country June 22, 1889. His condition did not change materially, although he was able to be about. The sinus did not close, but when the bladder was washed through the urethra the solution and urine came from it. During December he became worse, and died December 30, 1889. No autopsy permitted.

CASE III.—Mr. H. D. W., aged forty-seven, entered my service at the Albany Hospital March 7, 1889, with the diagnosis of stone in the bladder. Family history good. Patient had suffered over seven years from repeated attacks of renal colic. After one of these attacks he had severe burning pain in the penis, but at that time I was unable to find a calculus. He had not consulted any one from the time I first sounded him with a view to operation. For the last two years he has suffered severely, and six months ago was compelled to give up his business. His urine now contained pus, blood, and mucus in great quantities. He had had hæmorrhage from the bladder, and lost flesh and strength. I advised supra-pubic cystotomy, which was done March 5, 1889, and a single phosphatic calculus weighing 530 grains was found. Patient left the Hospital, with the wound completely healed, April 8, 1889. His cystitis was cured, and he had already gained in flesh and strength.

CASE IV.—Mr. R. M. F., aged sixty-five, married, native of Scotland, came to me, in May 1889, with the following history: About a year ago he had passed fine sand with his urine, and suffered greatly from vesical irritability. There was pain in the glans penis, stoppage of the stream, and slight hæmaturia. The searcher at that time employed by the family physician failed to reveal a calculus. He was treated by the usual remedies, and his bladder washed out at intervals by his family physician, Dr. A. T. Van Vranken. Under this management he improved, and was in fair health until March, 1889, when all of his old symptoms returned with increased violence. The urine was ammoniacal, and contained pus, blood, and mucus in large quantities. There was considerable prostatic hypertrophy. The searcher revealed a stone. I advised supra-pubic cystotomy and drainage. The operation was done May 29, 1889, the usual technique being employed. I not only removed one, but five calculi from different pockets of a sacculated bladder. A Trendelenberg drainage-tube was introduced, and the wound

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partially closed to secure a sinus from the bladder, after Dr. Hunter McGuire's method. The old gentleman was comfortable after operation, his bladder was washed daily with boric acid solution, and he left the Hospital, June 24, 1889, with the fistula established. His cystitis was greatly improved. The sinus soon healed after leaving the Hospital, and the bladder returned to its normal condition.

While my experience with supra-pubic cystotomy is not sufficiently great to make a personal generalization valuable, yet I feel that a comparison of it with other operations, done by me for similar conditions, might not be amiss. First, I am sure that I am able to explore more thoroughly by the supra-pubic than by the perineal incision. More especially is this true where the patient is fat and has a deep perineum. My first case of supra-pubic cystotomy here reported was for the removal of a papillomatous growth. I had already operated in the case by the perineal method recommended until recently by Sir Henry Thompson. The subsequent history showed that the second operation was much more successful than the first. The facility with which the operation was done the second time thus showed a great improvement over the first. The growth was more accessible, the hæmorrhage more easily controlled, and by the Trendelenberg position, with the use of the electric light and suitable retractors, an inspection of the field of operation was possible. Drainage was satisfactory. In the case of tuberculosis of the bladder, the diagnosis was surrounded by great difficulties. At that time there were no tubercular deposits in the mesentery, testicles, or epididymis. Primary tubercle of the bladder is exceedingly rare. In this case the exploration was necessary to complete diagnosis. I am convinced that the same principles that are involved in the exploration of other organs should be applied to the exploration of the bladder. Again, the experience of surgeons with tuberculosis of the peritoneum has been very satisfactory. Guyon[1] reported two cases of tubercular cystitis treated by supra-pubic cystotomy and the application of iodoform oil to the ulcer. One case was cured two and a half years later. The other was improved, and there was an absence of tuberculosis in both after treatment. From analogy, quite as much of the improvement can be attributed to drainage as to iodoform oil.

The two cases of stone were both accompanied by a severe type of cystitis, and one by prostatic hypertrophy, multiple calculi, and sacculated bladder. Litholapaxy is, in my opinion, absolutely contra-indicated in such cases. Permanent lithotomy has often been done, and calculi lying in sacs near the fundus have been overlooked. I have had so unfortunate an experience. Then, again, I have succeeded better with supra-pubic siphon drainage than with perineal drainage. It is very difficult to maintain an opening through the perineum after median section. Patients tolerate drainage-tubes badly, and their removal is often necessary after a few hours. After median lithotomy, patients begin to pass urine by the urethra often by the third day.

I had a case, not long since, of cystitis from enlarged prostate, in which the perineal section was done for drainage; a day after the operation the drainage-tube, which was a large one, slipped from the wound, and retention of urine occurred. A good deal more distress was caused in introducing it again, than in the same procedure by supra-pubic incision.

[1] Keyes: Annual of the Universal Medical Sciences, 1889.

REMARKS ON INTERMEDIATE LAPAROTOMY FOR APPENDICITIS IN ITS QUIESCENT STAGE.

BY ROBERT F. WEIR, M.D.,
ATTENDING SURGEON TO THE NEW YORK HOSPITAL.

WHILE a marked advance has been made in the pathology and treatment of perforations and gangrene of the appendix vermiformis and the abscesses that result therefrom, yet it may be questioned whether sufficient data exist at the present moment to warrant the use of so severe a recourse as a laparotomy in those cases in which the disease, previously of a threatening form, has returned once more to a period of quiet. In other words, it cannot be considered as settled that surgery is justified in its interference by the removal of an appendix when symptoms of urgency are not present. This seems arrayed against the teaching which has emanated from so able an exponent as Mr. Treves, but he himself has verbally and otherwise stated that the application of this intermediate laparotomy must, of necessity, be an extremely limited one. In truth, both physicians and surgeons see so many cases that recover, even when an operation almost stares one in the face, especially in these subacute cases, that we feel some uncertainty in these instances.

It is only in the actively progressing troubles in the right iliac fossa that surgeons are now in accord as to the necessity of early interference. As one of those who labored to present this conclusion to the profession, I venture, at the present time, to ask that more consideration be given to this point before accepting too hastily the maxim that the "ounce of prevention" theory applies to an appendix which has given rise to sundry previous attacks of pain, and perhaps dangerous tumefaction in the iliac region.

Though our knowledge has embraced the fact that perforative lesions of the appendix are mainly due to hardened fæcal contents or to foreign bodies (?), and that such openings are prone to be followed by gen-

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eral or circumscribed suppurative peritonitis, we are still ignorant, in a great measure, of the simpler forms of appendical trouble, such as inflammation pure and simple, or associated after awhile with stenosis of some part of its canal, and also how often such a stenosis will beget trouble by accumulation of retained materials. Furthermore, if such a distention or inflammation takes place, how dangerous is this compared with the perforative form? or, if perforation occurs from the bursting, is it as infectious as the other kind? May not, too, these simpler troubles be at the bottom of the slighter cases that so often are seen by the family medical attendant, and which the surgeon knows personally but little about? I have recently witnessed two laparotomies, and know of two others that have been performed in this city within the past two months for the ablation of an appendix in its quiescent stage, and have been struck by the total absence in each case of any trace of peritoneal changes from the previous attacks of pain, many of which were reported to have been severe. Most of these cases only showed some stenosis of a portion of the appendical lumen, with moderate accumulation of mucus or muco-pus beyond the removed portion. One only had signs of a previous great distention, and in this case a strong adhesion to a neighboring bowel might have explained some of the recurring symptoms. In only one case, I may here remark, in the fourteen times I have had occasion to remove the appendix in acutely progressing abscess, did I find this tube perforated by a retained secretion—in this single instance there were two openings each the size of a broom-straw, and the resulting abscess had been of nearly two weeks' duration in its development.

In one of the foregoing intermediate laparotomies I occupied the position of a consultant, and agreed with those in charge of the case to an operation. Though this resulted fatally, yet the grounds for the decision were potent to those in charge of the case mainly from the fact not only of the recurrence twice of comparatively sharp attacks of iliac pain, etc., but that the conditions of life of the patient caused him to travel extensively and thus often removed him from the continuance of proper surgical observation.

This condition, with the additional one that the attacks of recurrence should be so frequent as to impair the patient's usefulness in life, seems to me the only reason of weight amply to justify the performance, in the quiescent period, of an operation of acknowledged risk even in the most careful hands.

Time, of course, must solve the doubts that assail one's mind in these cases, and it may demonstrate that the delay which I now advocate as preferable is wrong; but in the cases other than in the circumstances just enumerated it is wiser, in my judgment, to wait until an attack is presented, and which in itself would warrant surgical interference, and which then is to be promptly afforded.

Within the past month I have given this opinion in favor of delay in three cases of recurrent appendical pain, and so far not one has had a return of the symptoms. Mr. Baker, of London, reported himself as the subject of twelve different attacks, and with a final period of freedom from symptoms for over ten years. It is probable, I may admit, that in such a case, seen by me during an attack, an operation would have been advised. But my point is, that only in exceptional and somewhat rare cases is it necessary to "climb the hill before we come to it."

I beg to add to these brief remarks that the significance of pain on the finger-tip pressure, spoken of by Dr. McBurney, between the anterior spine and the umbilicus is somewhat negatived by the investigations of Schüller, who found that the end of the cæcum, and consequently the beginning of the appendix, is situated on the average in a line running from the middle of Poupart's ligament to the umbilicus, at the junction of its middle and lower thirds. Furthermore, I have myself found, on examination of eighteen healthy persons by the above test of McBurney, that in four of them decided evidence of tenderness existed without other history of appendical attacks.

CLINICAL MEMORANDA.

SURGICAL.

Successful Laparotomy for Contusion of the Intestines.—E. A., aged twelve, a healthy farmer's boy, of spare build and nervous temperament, was kicked in the abdomen by an unshod horse, about 4 P.M., August 19, 1889. He cried out as he received the blow, sat down and bent himself forward with his hands over the abdomen. He became pale and faint, objected to being taken into the house, as he preferred the open air, and he vomited freely several times. Liniments and hot applications were used on the abdomen. I saw the patient at 10 P. M., six hours after the injury was received. His pulse was then 120, temperature 99½°; abdomen rigid, but not distended. A red semilunar mark, one inch below the umbilicus and in the middle line, showed the point of impact. Abdomen very tender and the boy was very restless, pale and suffering considerable pain. I gave opiates and applied cold compresses to the abdomen. He vomited again and the opiates were repeated during the night. At my next visit at 8 o'clock on the following morning he was sleeping lightly. Pulse 120, temperature 100½.° Abdomen very tender and decidedly tympanitic, countenance pale and anxious. He had urinated freely twice during the night; urine normal. I ordered sal rochelle every two hours and the cold applications being agreeable, were continued. The salt was given at regular intervals during the day; enemas were

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also used, but only resulted in emptying the rectum. At 10 P. M. pulse 120, temperature 101°. Abdomen largely distended, no opiates since 6 A. M., restless, but no severe pain, no action of bowels. During the following night he vomited several times, the vomited matter having a very distinct odor of decomposition. There was mild delirium and the stomach became intolerant of everything ingested.

On the morning of the third day there was a sudden fall of the temperature to 97°, while the pulse ran up to 140 and became very weak. The abdomen was enormously distended, tympanitic above, and dull below the umbilicus; countenance pinched, pale, and anxious. He had had no movement of the bowels since the accident. He tossed from side to side, and moaned, but said that he had no pain.

The sudden fall of temperature below normal, the increasing rapidity and weakening of the pulse, with the cessation of pain, he having had no opiates for twenty-four hours, led me to fear that gangrene of the intestines had occurred. I gave a very unfavorable prognosis, and suggested an exploration of the abdomen, intending to resect the gangrenous portion of intestine, if such a condition existed to a limited extent.

Being strongly impressed with the hopelessness of the case, the parents readily assented to the operation, if I thought it offered any chance whatever for his recovery.

Being in the country, eight miles from home, I left the patient to make the necessary preparations, and get assistance. Having had some experience in abdominal surgery, I had instruments already prepared for that kind of work, and returned in three hours, Drs. Kimball and Eady with me to assist. These gentlemen carefully examined the patient, and gave their unqualified opinion that a fatal termination was to be speedily expected. The patient being anæsthetized, the abdomen was cleansed and surrounded with aseptic towels. My instruments were in hot carbolized water. Hands were scrubbed with nail brush and soap in water as hot as could be borne. My assistants as well as myself, had on aseptic operating robes. The operating room had an oil cloth carpet, which had been mopped while I was making preparation. All water used was boiled, strained, and used as hot as possible. The house and family were cleanly, and all the surroundings were favorable.

The integument still showed the mark where he received the blow. A greenish serum escaped from the rectus as I opened its sheath, the muscle being œdematous and discolored. The abdomen contained considerable inodorous, bloody serum. The intestines were inflated, very red, and presented a sodden, œdematous appearance, and were covered with organized lymph, which also extended across the folds in bands. The omentum was also covered with lymph, in the midst of which was a black spot three-fourths of an inch in diameter. I turned out the ileum and searched for gangrenous intestines, but found none. They were freed from the lymph, and being so inflated that their return into the abdomen would be difficult, I tapped with a trocar, drew off much gas and over a pint of liquid contents. The perforation was closed with a catgut, Lembert stitch, the serum absorbed with a sponge, and the abdominal incision closed with silk sutures, leaving a drainage tube in the lower angle of the wound, which was dusted with iodoform, covered with rubber protective, bichloride gauze, and the usual abdominal bandage. As the serum was inodorous, I did not irrigate the peritoneal cavity. At the close of the operation, as his pulse was 150 and very weak, hot whiskey was given per rectum. He rallied slowly but steadily. He received ¼ grain of morphine and $\frac{1}{150}$ grain of atropine, hypodermically, two hours after the operation, on account of the severe burning pain in the wound of operation which caused much restlessness. This promptly rendered him quiet and comfortable. Six hours after operation his pulse was 140, temperature 100°. He became restless during the following night and again received morphine and atropine, which was the last opiate in any form that he required or received. He was also given soluble beef per rectum. The following morning his pulse was 120, temperature 99°. A small amount of serum escaped from the drainage tube during the day. He was given five grains of salol with ten grains of powdered charcoal every three hours; the salol as an intestinal antiseptic, the charcoal as an absorbent, and for another purpose which will appear further on. His kidneys secreted freely and bowels moved spontaneously the third day, the movements being aided by the beef enemas, which he would retain two or three hours. The tympanites subsided, and on the fourth day the charcoal appeared in the fæces, which gave assurance that the intestinal tract was open throughout its entire length, and that constriction from adhesions was no longer to be feared. The drainage tube was removed the third day, and the sutures the fifth, primary adhesion being secured except at the lower end of the incision. Small abscesses formed around two of the sutures where they passed through the contused muscle. They did not communicate with the adominal cavity and were thoroughly evacuated and injected with "campho-phenique," and two days thereafter there was no sign of suppuration.

After the appearance of the charcoal in the fæces, he was given liquid food per orem and the enemas were discontinued.

On the ninth day his bowels failed to move and in consequence became much distended with gas. The tension became so great that in spite of adhesive straps, the wound opened for two-thirds of its length. This gap was in the integument only; the underlying tissues remaining firmly united. The bowels were opened with a saline which relieved the distention. The wound was dressed with gauze wet with "campho-phenique" and granulated without suppuration.

On the fifteenth day I gave an anæsthetic, freshened the edges of the separated integument, and united it with continuous catgut, supported by three silk sutures. The latter were removed five days later, the catgut remaining undisturbed. Prompt closure of the wound was thus secured and no further trouble was experienced. Otherwise his improvement was continuous from the date of the operation, and his recovery was complete.

I am not aware of any precedent for the measures adopted in this case. Accidents from the same cause frequently occur, and quite frequently terminate fatally. The abdominal walls are often but slightly injured, or even marked, owing to their resiliency, and to the protec-

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tion afforded by the clothing, and no definite opinion can be formed from the external marks, of the injury which the viscera may have sustained. More or less shock is expected to accompany such injuries, which may deepen into collapse, or be followed by reaction, with subsequent pain, tenderness, distention, constipation, and peritonitis, or other symptoms depending upon the organ injured, or on the nature of the injury received. However, these symptoms are by no means constant, and many cases are on record in which there was but little shock, several days elapsing before collapse indicated that a fatal termination was near, the autopsy revealing rupture of intestines or other extensive lesions.

The general plan of treatment for such injuries has heretofore been rest, opiates, and fomentations, hot or cold. Beyond this it has been wholly expectant, meeting indications as they arose. Authorities have but little to recommend as to surgical treatment where there is no external wound communicating with the abdominal cavity, and where rupture of internal viscera is not certainly known to have occurred. Emergencies frequently occur in the practice of every surgeon, in which he will search in vain for a guiding precedent, but will have to be guided by general principles and devise measures for the relief of the trouble. In this case, expectancy failed, collapse was imminent, and opening the abdomen would scarcely add to the gravity of the case.

The condition of the omentum showed that the attempt at organization of the exuded lymph had been arrested, and its death was occurring. The sodden, œdematous intestines, were inert and any attempt to excite peristalsis by the use of cathartics would be impossible and their exhibition useless. Their paralyzed condition was particularly well shown when I attempted to draw off their contents with the trocar. After the escape of the gas and fluid in the immediate vicinity of the perforation, to get any further flow, manipulation of the gut between the fingers was necessary. The contents could not be forced any distance, but would be arrested by the first bend or flexure of the bowel. Nor do I believe that aspiration would have given any better results.

E. H. KING, M.D.

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HOSPITAL NOTES.

SYPHILIS. SCABIES. ECZEMA.

Abstract of a Clinical Lecture
Delivered at the New York Post-Graduate School.

BY ROBERT W. TAYLOR, M.D.,
PROFESSOR OF DERMATOLOGY.

THE first patient presented to the class was a man, twenty-four years of age, who, five years before, had gonorrhœa and several chancres; but he gave no distinct history of syphilis until two months ago, when glandular enlargement and an eruption made their appearance; and subsequently he began to be troubled with rheumatic pains in the knees. As it is the exception to find multiple hard chancres, it is probable that five years ago he only had gonorrhœa and chancroids. At present there is a typical pustular syphilide of the scalp, and a general papulo-pustular eruption, which is pinkish on the legs rather than coppery in color, owing to considerable inflammation.

In hunting for an initial lesion, it is important to examine the lymphatics, and at first sight it would seem that the disease in this case must have gained entrance on the chin; but the glands here are not much enlarged, and this enlargement appeared with the rash. The lesion in this locality has not the depth and consistency of a hard chancre. In all probability the point of entry of the disease was some insignificant lesion on the penis.

No scratch-marks are observed on the legs, and yet the patient complains of itching both of the scalp and legs. As a rule, syphilitic eruptions do not itch, except about the head—where it is common—and it may be remembered that patients saying that an eruption itches, is not sufficient to classify it as a pruriginous eruption; for, it is natural for anyone to scratch a pimple, and after it has been irritated in this way it is quite possible for itching to exist almost entirely as a subjective symptom. These syphilitic eruptions are not pruriginous in the sense that an eczema is a pruriginous eruption. On the legs, the itching is very often due to some temporary acceleration of the circulation in these parts, brought about, perhaps, by wearing flannel or tight-fitting boots, or by a plethoric condition of the system from one's diet, or the ingestion of malt and alcoholic drinks.

The rheumatic pains of which the patient has spoken, depend upon a low grade of inflammation of the fibrous tissues about the joints.

This man has been attempting too much work, and that, too, in the most critical period of his syphilis. In the treatment of this case it is to be remembered that a man thus debilitated can only do about sixty-six per cent. of the work of a healthy man. The diet must be carefully regulated, drinking and smoking carefully avoided, and the patient placed under the best hygienic surroundings. Internally, he should take one-third of a grain of the proto-iodide of mercury three times daily; and locally, he should be instructed to rub a twenty per cent. oleate of mercury ointment into the scalp after proper shampooing. Besides this, it is to be rubbed over the patches on the body, and especially about the knees, and a plaster of the same or of mercurial ointment can be applied at bedtime about these painful joints.

The second case presents an exception to the rule just mentioned, for he has three hard chancres which appeared four months ago. At present there is inguinal adenitis on both sides, and right epitrochlear enlargement, together with a general roseolous syphilide.

In treating this case the spots on the face and hands should be rubbed with a calomel ointment—one drachm to one ounce. It is ever to be borne in mind that in the majority of these cases there are cachexia and debility, and the tendency of the disease is toward depression. In curing the diathesis one must endeavor in every possible way to fortify the system. This man requires a tonic of iron and quinine with one-quarter of a grain of the proto-iodide of mercury, three times daily.

The third case had his chancre two months ago. This was followed by inguinal adenitis; and at present he shows, particularly about the hands and wrists, a larger form of miliary papular syphilide, which has been made itchy by attrition.

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Noticing the aggregated papules only about the wrists, one might be led to make a diagnosis of scabies; but on the back of the hand they are not at all inflammatory, and they are entirely absent between the fingers.

This *large* pox bears a certain resemblance to smallpox. The eruption has a hard, shot-like feeling, and on the face looks like a mild case of smallpox; but the patient has not had the prodromal fever, pain in the back, and general prostration which accompany smallpox; and the eruption, instead of coming out on the face, and spreading regularly downward in the course of a week or ten days, has taken at least one month in its downward course; and in doing this it has skipped certain portions, and is centred upon the hands. His occupation, necessitating working in oil, will probably account for the latter fact. In this case only a few of the lesions will go on to the formation of pustules, whereas in smallpox pustulation takes place rapidly. Thus, it is seen, on comparing the symptoms of syphilis and smallpox, that there is a similarity in the lesions only, not in their development, nor in their subsequent career.

In this case a modified treatment is necessary. It must be borne in mind that all these papules on the body are foci of infection; for the syphilitic process in each nodule is capable of causing indefinite multiplication of the new cells. A mild inunction treatment will accomplish much for this patient. Preparatory to the inunction, the patient will bathe his face well with soap and water at night, and then immerse himself for ten or fifteen minutes in a warm bath containing one pound of sal soda to thirty gallons of water. This bath will put the skin and follicular openings in proper condition for receiving the mercurial inunction. The inunction is to be made three times daily with twenty grains of a fifty per cent. blue ointment, beginning at the head, rubbing it in thoroughly, especially around the ganglia, then passing successively to the groins, sides, and legs. Internally, he will be given the citrate of iron and quinine, and will be told to avoid smoking, drinking, and everything which will be likely to disturb the stomach.

The fourth patient says that his syphilis began about sixteen months ago, when he had one chancre, which was followed by an eruption about the shoulders. Dr. Taylor called attention to the fact that in the four cases of syphilis which had been presented, only one had multiple hard chancres. The inguinal glands are somewhat enlarged, though the patient has been under treatment. About ten months after contracting the disease, ptosis developed; but at no time was there any impairment of vision. Ptosis occurring suddenly in young people is very often found to be due to syphilis, and it is a symptom of much diagnostic importance, particularly when combined with mydriasis, which is a not uncommon coincidence.

The patient's general condition is good, and his appetite is excellent, but the eruption has returned. This case at the beginning required very different treatment from that which is now indicated. At present there is nothing urgent; there is simply a relapse of the eruption; but it shows that the diathesis is still active in his system. There is no necessity for tonics, for the patient's appearance shows that he is decidedly robust. He has been well treated, and his nutrition has improved since the onset of the disease. The significant point in this case is that, even though in such a good condition, there has been a relapse of a large pustular syphilide, showing that the infectious material is still circulating through the system.

For this patient, frictions with fifty per cent. blue ointment are recommended for five nights; it should then be omitted for three nights, when the treatment may be resumed for five nights more. Always insist upon the preparatory bath and a thorough cleansing of the parts.

Whatever the treatment, one must always remember to make peace with the mouth, and see that the gums, tongue, and throat are as nearly as possible healthy. When mercurials are being administered, always insist upon the avoidance of smoking and drinking, and of the eating of vegetables and fruits which are apt to produce diarrhœa, particularly in cases where inunctions are employed; for these inunctions may cause colitis. This irritation of the alimentary canal is often sudden and furious in its onset, and is due to some sympathetic or metastatic effect upon the head of the colon. If, during treatment, the patient loses flesh or the digestion becomes impaired, stop the treatment or, if absolutely necessary to continue the administration of mercury, resort to some other method of giving it.

Dr. Taylor next directed the attention of the class to a boy, aged twenty years, who had a mild eruption of scabies, which had begun between the fingers and had spread, by scratching, to the body. The eruption often spreads up the back of the hand, and turns in the furrow at the end of the styloid process of the radius, and then up the arm, centring in the thick skin of the elbow. In this case, the papules along the anterior fold of the axilla have become accompanied by pigmentation from scratching, and all over the body they are small and not very inflammatory. None have appeared upon the penis. Twenty years ago scabies was really rarer than lupus, but now it is quite common. The acarus is transferred by the nails to different parts of the body. It also in its wanderings invades new tissue.

The source of contagion in the present instance is not known, for the patient has not been around horses or dogs, nor has he slept in bed with other persons having itching eruptions, nor has he worn gloves or clothes belonging to others. Dr. Taylor has found that the cases occurring among the better classes, which are far from uncommon, could be traced to a night in a sleeping-car in very many instances.

In private practice, one is doing well if he succeeds in curing his patient within a week. The patient is to soak himself thoroughly in a bath at 100° F., in which there has been dissolved one pound of washing soda, and while in the bath he is to rub himself thoroughly with some good soap that makes an abundant lather, like Pears' unscented soap. Having dried the surface, he is to rub in an ointment, consisting of one drachm each of balsam of Peru and milk of sulphur to each ounce of vaseline. This is to be left on all night. He should have ready clean bedding and clothes.

There is no necessity for internal treatment, but drinking liquor of any kind should be avoided, as the consequent increase in the circulation would add to the irritability of the skin. It is also wise to avoid eating anything which might produce an erythema.

The next patient, a girl twenty-two years of age, and unmarried, presents an eruption which began as a scaly patch on the face, and which was scratched and freely

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washed with soap and water. It has spread by scratching to the hands, and has attacked the finger-nails, transforming the skin into rough, harsh, scaly patches—in other words, it is a case of thickened and infiltrated eczema of the neck and hands.

She also has a large furuncle on the arm, and it is worthy of note that these furuncles very commonly make their appearance as the eczematous eruption is declining, or after its disappearance; and it is probable that in the highly sensitive state of the skin associated with this condition, pyogenic bacteria lodge in the follicles and give rise to these spots of suppurative inflammation.

The patient must first be made to understand that all sources of irritation must be removed, that wetting of the hands is to be carefully avoided, and even movement of the parts is to be reduced to a minimum. Internally, she may take an alkaline tonic like the following:

℞.—Potassii citrat. . . . . f℥j.
Ferri et quin. cit. . . . . f℥iss
Syrupi . . . . . f℥ij
Aquæ . . . . . f℥viij.—M.

Sig.—One tablespoonful three times daily in two tablespoonfuls of water.

Locally, there should be constantly applied to the affected parts an ointment composed of equal parts of diachylon and zinc ointment, with twenty grains of carbolic acid to each ounce.

The alkaline tonic has a decidedly beneficial effect in allaying the irritability of the skin, and at the same time it improves the general nutrition.

MEDICAL PROGRESS.

The Prevention of Chilblains.—LIEBRICH recommends the following wash as a prophylactic against chilblains:

℞.—Alum, Sodium borate } of each . 75 grains.
Rose water . . . . 9 ounces.—M.

This should be used frequently.

He also advises either of the following ointments:

℞.—Sodium borate . . . 80 grains.
Simple cerate . . . 1 ounce.—M.

or,

℞.—Camphorated oil . . . 2 drachms.
Lanolin . . . . . 3 ounces.—M.

Hæmorrhage after Tonsillotomy.—According to SIR MORELL MACKENZIE, hæmorrhage after excision of the tonsils can be controlled by a mixture of tannic and gallic acids better than by any other means. They should be combined in the proportion of one-third gallic acid to two-thirds tannic acid, the efficiency of the combination depending upon the fact that the tannic prevents the gallic acid from dissolving.—*Indian Medical Gazette*, December, 1889.

Iodine in Vomiting.—According to the *Practitioner* for February, 1890, M. DARTHIER has recently added his testimony to the value of iodine for the relief of vomiting. The drug has been employed for this purpose for years both in America and England. (See *Amer. Journ. of Med. Sci.*, April, 1883.) Darthier has used the tincture in nineteen cases, eleven of which were tubercular subjects, and has concluded that it is of more value in the vomiting of early phthisis than in the later stages of the disease. He relates cases with obstinate vomiting where the symptom was well controlled by the drug. One case had vomited after each meal for three weeks. From the commencement of the iodine treatment vomiting decreased, and at the end of a week had entirely ceased. The drug also proved useful in cases of alcoholic gastritis, gastric ulcer, and in the vomiting of pregnancy and chlorosis.

In the *Lancet* of February 1, 1890, DR. FREDERIC TAYLOR also warmly recommends this method of treatment. He usually administers three to five minims of the tincture well diluted with water, and repeated every hour or half hour for six to eight hours if necessary; the result is usually attained, however, after the second or third dose. He has used it with success in the vomiting of Bright's disease, in cerebral vomiting, in the vomiting of migrain, in vomiting after chloroform, and in that due to gastric disease. In his experience it more frequently relieves than any other drug used for the same purpose.

Tobacco and Alcohol Headaches.—The following prescription for use after excessive indulgence in alcohol or tobacco, is quoted by the *Kansas City Medical Record*:

℞.—Aromatic spirit of ammonia ½ drachm.
Spirit of chloroform . . 10 minims.
Water . . . . . 1 ounce.—M.

To be taken in one dose.

Treatment of Acute Gastric Catarrh.—In the treatment of acute catarrh of the stomach, DR. SAUNDBY, of Birmingham, advises, in addition to a restricted diet, one grain of calomel at bedtime, and before each meal a powder composed as follows:

℞.—Bismuth carbonate } of each 2 grains.
Sodium bicarbonate }
Powdered rhubarb . . . ½ grain.
Aromatic powder . . . 1 " —M.

If pain is persistent a mustard plaster is to be used. If the patient is subject to recurring attacks, a broad flannel band should be worn around the abdomen.—*Provincial Medical Journal*, February 1, 1890.

The Treatment of Pharyngeal Inflammations by the Administration of Salol.—In a recent number of the *Annales des Maladies de l' Orielle, du Larynx, du Nez, et de Pharynx*, DR. GOUGUENHEIM reports twenty-two cases of inflammation of the soft palate, of tonsillitis, simple pharyngitis, and other forms of pharyngitis, treated with the most remarkable success by the internal administration of salol in doses of from 45 to 60 grains daily in three separate doses. Dr. Gouguenheim acknowledges his indebtedness to Dr. Caport, of Brussels, who first called his attention to the remarkable value of this remedy in the treatment of suppurative tonsillitis, and on this account was led to test its value in various forms of angina. On account of insolubility, the remedy was simply sus-

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pended in a mucilage, with directions given to shake it well before using. The diet was almost exclusively restricted to milk. In all Dr. Gouguenheim's cases there was the most remarkable rapidity observed in the cure of dysphagia, no matter what might have been the cause of the angina; in four cases of severe scarlet fever the same effects were noted. In suppurative tonsillitis, although the results were evident enough to be highly satisfactory, the effects were not as striking as in simple inflammatory affections, though even here the author claims that his success surpasses what was to be expected from any other form of treatment. In some cases the daily dose of 60 grains was exceeded, 90 grains being given in one case where the angina had been complicated by articular rheumatism. In most of the cases there was marked reduction of temperature, with reduction in the swelling of the throat, fever, and dysphagia. —*Therapeutic Gazette*, February 15, 1890.

Strophanthus in Infantile Diseases.—According to the Paris correspondent of the *British Medical Journal*, M. MONCORVO has treated many infantile diseases with strophanthus, and comes to the following conclusions: As a diuretic and for combating cardiac disturbance strophanthus is invaluable in infantile therapeutics. Its action is prompt and energetic. It is perfectly innocuous. The tincture in mitral or aortic lesions with irregularity and deficient secretion of urine restores cardiac tone, regulates the rhythm, and strengthens the pulse. In infantile pneumonia or broncho-pulmonary affections, accompanied by cardiac weakness, strophanthus is a valuable heart tonic. M. Moncorvo has not observed any marked influence on the nervous system or temperature. The action of strophanthus persists long after the treatment has been discontinued. M. Moncorvo employed an alcoholic tincture, in doses varying from four to twenty-eight drops in twenty-four hours.

Corrosive Sublimate for Granular Lids.—In the *Annales d'Oculistique*, DR. ARNAUTS reports excellent results in the treatment of granular lids by the application of solutions of corrosive sublimate of a strength somewhat greater than is usually employed. He prescribed collyria of corrosive sublimate in the proportion of 1 to 500 and 1 to 400, and of this one or two drops are instilled into the eyes two or three times daily. He admits that solutions having this strength excite some transient irritation of the conjunctiva; but this disappears in the course of a few minutes, and may be prevented by the antecedent instillation of a few drops of a solution of cocaine hydrochlorate. The remedy, he observes, costs little, and admits of easy application; and reduction of the granulations soon takes place. The effects of the solution are also well marked in causing the vascularization of the cornea to disappear. The same plan of treatment can also be adopted with advantage in cases of ulcers of the cornea, many of which will rapidly heal under the influence of the solution. Dr. Arnauts records several cases showing the advantages to be derived from its use.—*Practitioner*, February, 1890.

Biniodide of Mercury in the Treatment of Scarlet Fever.—In the *Provincial Medical Journal*, January, 1890, DR. ILLINGWORTH records five cases of scarlet fever treated by the biniodide of mercury, in which the disease was aborted in each case in seven days. As soon as the rash was well marked, the following mixture was given:

℞.—Solution of bichloride of mercury (Br. Ph.) . .	6 drachms.
Potassium iodide . .	15 grains.
Aromatic spirit of ammonia	1 drachm.
Syrup	1 "
Water	6 drachms.—M.

One teaspoonful of this was administered every two hours.

The throat was sprayed every four hours with 1 : 2000 biniodide in sodic iodide. On the seventh day of the disease, in a child nine years old, the rash had quite gone, the temperature was normal, and the tonsils were granulating. In three other cases the same treatment was used with a similar result. In one the throat was not sprayed, and the disease caused otitis by extension along the Eustachian tube. The only case of cervical abscess was one in which no local application was made. In one case urgent purging came on within twenty-four hours, so the mixture was stopped, and the tincture of chloride of iron given every two hours with a powder of one-sixteenth of a grain of the biniodide three times a day. As regards infection, the author states he has since found that by painting the throat with 1 : 500 solution every four hours the disease is prevented from spreading; desquamation is merely scurfy, and chiefly confined to fingers and toes.

Intra-venous Injections of Quinine in Malaria.—BACCELLI, of Rome (*Revue Générale de Clinique et de Thérapeutique*, January 23, 1890), in considering the treatment of the graver forms of malaria, advocates the intra-venous injection of quinine, as the drug is absorbed somewhat slowly after subcutaneous injection, and still more slowly when administered by the stomach. Baccelli was the first to experiment with the intra-venous method (*Medical News*, January 25, 1890), and he states that after the intra-venous injection, examination of the blood shows that the hæmatozoa retain their form and activity for from six to twelve hours, when they disappear. Ten minutes after the injection the drug appears in the urine. The solution used by Baccelli consists of hydrochlorate of quinine, 15 grains; chloride of sodium, 1½ grains; distilled water, 2⅓ drachms. The operation is conducted with strict antiseptic precautions, disinfecting the skin with sublimate solution. A band, as for venesection, is placed around the arm, and the needle is then carefully inserted into the most prominent vein, and the solution slowly injected. Not more than from seven to twelve grains of the quinine salt should be used for one injection, as larger doses produce symptoms of cinchonism. It is useless to give the quinine during a paroxysm, the proper time being after the paroxysm is over. Given at such a time, it will prevent, or greatly modify the subsequent attack. In remittent malarial fever, the injection should be made at the beginning of the remission.

Treatment of Epilepsy with the Actual Cautery.—In the *Revue Générale de Clinique et de Thérapeutique*, Jan. 23, 1890, DR. DESCROIZILLES reports three cases of epilepsy treated with the actual cautery. The first was a

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boy of eight years, suffering from *petit mal*, with many attacks each day, and an occasional true epileptic convulsion.

The second patient, a boy of four years, had suffered from *petit mal* since the first month of his life, the attacks later becoming convulsive.

The third case, aged nine years, gave a history similar to the preceding, except that the attacks were less frequent.

All of these cases Descroizilles treated by means of cauterizations of the shaven scalp with a point of hot iron. In the first cases, ten successive cauterizations were made in a period of six weeks; in the second, six; and in the third, four cauterizations; each application consisting of about thirty light touches with the heated point. None of the patients resisted the treatment, nor was it followed by pain or inflammation. In the first patient the attacks were reduced to one or two a day, then ceased for several days, but finally returned with their former severity.

In the second case, improvement followed for a few days, but was only temporary. In the third case, no influence on the disease was exerted by the treatment.

Antiseptic After-treatment of Vaccination.—MR. JOHN BARK, of Liverpool, after a long experience as public vaccinator, finds that there is not inconsiderable danger of erysipelas after vaccination, particularly among the poorer and dirty classes. This danger, he believes can be avoided by dressing the arm with a large pad of borated or eucalyptol cotton after opening the vesicle on the eighth day. On removing this pad, six or seven days after its application, it is found that the inflammatory infiltration has entirely disappeared, and in most cases a firm, hard crust has replaced the vesicles, so that the arm can be left unprotected.

The Treatment of Asthma.—DR. T. F. PEARSE writes, in the *Lancet*, February 1, 1890, that in the treatment of asthma nothing is equal to sodium nitrite. As a rule, he prescribes it alone. In some cases, however, with the object of promoting sleep, he combines hyoscyamus with it. In other cases, the addition of tincture of lobelia has seemed of benefit. When the sodium nitrite first came into use, he gave several doses of ten or fifteen grains to one patient who had suffered from repeated attacks of uncomplicated asthma for several years. The first dose made the patient so sick and faint that she could hardly be induced to repeat it, but she was freed from her asthmatic attacks up to the present time, a period of two or three years. Since then he has given it in doses of from three to five grains, frequently repeated, and always with the greatest benefit. With regard to hyoscyamus in asthma, he has found that the ordinary doses are of little use. Two drachms of the tincture are prescribed for a single dose, or one drachm, if it is to be repeated. Given alone in asthma, it will not relieve the paroxysm, but, combined with sodium nitrite, the effects are sometimes marvellous.

Treatment of Buboes.—In the Lyon *Médical* for January 26, 1890, M. CORDIER contributes an article on the treatment of bubo, in which he describes the various methods which are best adapted to the treatment of this troublesome condition, and reaches the following conclusions: First, in all cases puncture of the inflamed gland is to be performed, and the risk of meeting with pus is to be taken. Second, after the puncture, it is best to make an injection of a solution of nitrate of silver of the strength of 1 to 50. This he believes to be productive of a very rapid cure with a healthy cicatrix, although the method is more active than those generally employed.

The Disadvantages of Sulphonal.—According to HENOCQUE, sulphonal produces profound sleep, does not diminish reflex action, and is not an analgesic. A sufficiently large dose causes, in animals, death from arrested metabolism and depression of temperature. Its unquestionable hypnotic properties have been used by many alienists, who prefer it to chloral, paraldehyde, hypnone, or amylene hydrate. Italian and German physicians are particularly enthusiastic, the French less so. The latter have found it an unfaithful hypnotic in doses of fifteen to twenty grains, and that in larger amounts it causes chilliness, vomiting, diarrhœa, cutaneous eruptions, stupor or vertigo. Melancholics complain of hallucinations after its administration; hypochondriacs are depressed. —*Revue Générale de Clinique et de Thérapeutique*, January 23, 1890.

Sunflower in the Treatment of Malaria.—In the Moscow *Meditzinskoïëee Obozrenië*, DR. MAMINOFF writes that he has recently tried the sunflower in ten successive cases of malarial fever in children aged from one to eleven years. Some of the cases were of an extremely severe and refractory nature, the affection having persisted in spite of treatment by quinine, arsenic, ergot, calomel, etc. In each of the patients, the sunflower course was rapidly followed by radical cure; in recent cases, the paroxysms ceased to recur from the second day of the treatment; in more inveterate ones, from the fourth or fifth. The remedy was employed in the shape of a tincture (1 : 5), prepared of fresh flowers and bark of the plant, the dose varying, according to the patient's age, from ten to twenty-five drops three or four times daily. Since the tincture is free from any pronounced or unpleasant taste and odor, it is taken by children quite readily. No disagreeable effects were ever observed. Dr. Maminoff warmly recommends a fair and extensive trial to this very simple, cheap, and easily accessible antimalarial remedy.—*Provincial Medical Journal*, February 1, 1890.

The Treatment of Chronic Gastric Catarrh.—DR. ROBERT SAUNDBY insists that patients suffering from chronic catarrh of the stomach should be restricted to three meals a day, at fixed hours, the most suitable being: breakfast, eight to nine; luncheon, one to two; dinner, seven to eight. No food between these meals should be allowed. On rising in the morning the patient should sip five or six ounces of quite hot water, with or without a teaspoonful of Carlsbad salt dissolved in it, according to the state of his bowels. The salt may be taken every other morning, but the water every morning. This will wash the stomach clear of the decomposing mucus. If there is much nausea, it is very good practice to give an emetic the first morning—half a drachm of zinc sulphate with plenty of water.

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Breakfast.—If the stomach is very irritable, no hot drinks, such as tea, coffee, or cocoa, should be allowed, but a cup of cold milk and water substituted. Afterward cocoa or chocolate may be taken, with very little sugar. Boiled fish, boiled or poached eggs, or a little smoked or salted ham, may be eaten with two small slices of dry toast, but fats should be taken very sparingly. No fruits, vegetables, or sweets should be allowed.

Luncheon.—Two arrowroot biscuits, or small slices of toast; oysters (with lemon juice, not vinegar); a mutton chop; a slice of cold meat, fowl, or game: milk pudding, aërated water.

Dinner.—No soup. Boiled white fish; stewed sweetbreads, tripe; lightly cooked beef or mutton, roast or boiled; fowl or game; no pork or veal; no vegetables except a little well-cooked potato: milk or custard pudding, jelly; no fruit or pastry; no cheese. No beer or spirits. Aërated water is the best drink. A glass of claret, with aërated water, is permissible—no other wine.

In this list it is to be especially noted that all fruits and vegetables (except a little well-cooked potato) are excluded: this is of great importance; a grape-skin or a piece of indigestible carrot will stir up an amount of irritation in a catarrhal stomach that will require many days to allay. On the other hand, animal food, if not overcooked, is easily digested, and offers no mechanical resistance to the coats of the stomach. Vinegar, sugar, and beer are to be avoided, because they increase the acetous fermentation. Fats are liable to retard digestion, as are tea, coffee, spirits, and all wines, except champagne; but a little claret with aërated water, or a glass of champagne, may be taken if desired. Pastry, cheese, veal, pork, lobster, crab, hot and spiced dishes, ices, and iced water are all known to be either indigestible or irritating, so should be expressly excluded.

If there is any pain or irritability, bismuth and rhubarb may be taken before meals. Where, however, the symptoms point more to sluggish digestion, fulness, and weight after meals, ten drops of dilute hydrochloric acid may be given in a wineglassful of water an hour after each meal, or the following mixture:

℞.—Dilute hydrochloric acid	2 drachms.
Dilute hydrocyanic acid	1 drachm.
Strychnine	½ grain.
Glycerin	½ ounce.
Water	5 ounces.—Mix.

Of this a tablespoonful should be taken in water one hour after each meal.—*Provincial Medical Journal*, February 1, 1890.

Iodinated Muslin.—Taking advantage of the property possessed by cellulose of fixing iodine, which is afterward set free under the influence of gentle heat, "iodinated squares," to be used in the same way as ordinary mustard leaves, are proposed. It is said that the iodinated muslin has certain advantages over applications of the tincture of iodine, causing less irritation, so that the effects of the iodine can be longer continued. The fabric is prepared by first placing for a few minutes in a two per cent. sodium bicarbonate solution. It is then washed and pressed and immersed for half an hour in a four per cent. solution of calcium chloride. Following this it is washed until the reaction is no longer alkaline, and placed in a five per cent. solution of hydrochloric acid for fifteen minutes, after which the acid is washed out and the muslin dried. Finely pulverized iodine is now spread upon both sides, the fabric is loosely rolled and placed in a glass-jar. This is heated until vapors of iodine begin to arise, when it is sealed and placed for two hours in a water-bath at 212° F. On cooling, the muslin is ready for use.—*American Journal of Pharmacy*, February, 1890.

Formulæ for Dyspepsia.—HUCHARD points out certain means of combating dyspepsia and the prevention of flatulency. Among the medicaments he considers chloroform one of the best, but on account of its local irritating action it must not be employed in its pure condition or in capsules, as so often ordered. The best form is saturated chloroform water, after one of the following formulæ:

℞.—Saturated chloroform water	4 ounces.
Distilled water	3½ "
Mint water	1 ounce.—M.

One teaspoonful to be taken with each meal.

℞.—Sat'd chloroform water, Orange-flower water	of each 4 ounces.
Tincture of anise	2½ drachms.

To be given as above.

In the following preparation the chloroform is associated with the excitants of the muscular walls of the stomach:

℞.—Tincture of gentian, " " anise, " " nux vomica	of each 1. drachm.
Chloroform	20 to 40 drops.

Mix and filter. Take from ten to twenty drops in a little water fifteen minutes before eating.

When the so-called absorbent powders are preferred, the following may be prescribed:

℞.—Powdered poplar charcoal	2 drachms.
Sodium bicarbonate	1½ "
Calcined magnesia	1 drachm.
Powdered calumbo	½ "

Mix, and divide into forty powders. Take one powder an hour or half an hour before meals.

If, at the same time, an antiseptic action is desired, the following may be given:

℞.—Beta-naphthol, Salicylate of bismuth, Magnesia	of each 75 grains.

Mix, and make thirty powders. To be administered as the preceding.

The following is useful as an aid to digestion:

℞.—Pancreatin, Sod. bicarb. or benzoate, Magnesia	of each 1 drachm.
Powdered nux vomica	5 grains.

Divide into twenty powders, one of which is to be taken before each meal.—*Journal de Médecine et de Chirurgie*, January, 1890.

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THE MEDICAL NEWS.

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SATURDAY, MARCH 1, 1890.

THE INFLUENCE OF MENSTRUATION UPON LACTATION.

FROM the earliest periods of medical history, the idea that the return of menstruation has an injurious influence upon the milk of a nursing woman has found many supporters. At the present day this opinion is generally entertained by the laity and by a large number of practising physicians, although it had its origin in absurd hypotheses in regard to milk formation and the nature of the menstrual discharge. Recent investigators, it is true, have stated that the quantity and quality of a woman's milk are altered by the reappearance of the menses, and one observer claims that human milk, during menstruation, contains bacteria. The first assertion rests upon a study of meagre material; the last is incorrect. The best work yet done in this important field has recently been published in the *Wiener klinische Wochenschrift* (Nos. 51 and 52, 1889, No. 5, 1890, "Ueber den Einfluss der Menstruation auf die Lactation," F. Schlichter). In the Foundling Asylum for Lower Austria, during a period of five and a half months, careful watch was kept over the general health, evacuations, and weight of fifty-two children, suckled by women in whom menstruation had appeared, and thirty-three milk analyses were made. The work appears to have been done most carefully, and the conclusions arrived at, which we quote, deserve attention. "The increase of weight in children suckled by menstruating women is, in many cases, extraordinary."

"The average increase in weight is greater during and directly after the appearance of menstruation than before."

"The condition of the child during menstruation in its nurse is all that could be desired."

"During the so much dreaded menstruation, but a single child became dyspeptic; the dyspepsia, however, did not interfere with a normal gain in weight in this child."

"The milk analyses showed, on the average, less difference between the milk of a non-menstruating and a menstruating woman, than between the specimens of milk taken from one individual at morning, noon, and evening." The paper closes with the four following conclusions, which we have modified by the insertion of qualifying phrases, in parentheses.

1. Menstruation returning during lactation—that is, after the sixth week from delivery—is not (necessarily) injurious to mother or child.

2. Metrorrhagia before the sixth week may retard the development of the child. (This is true during later periods of lactation as well.)

3. Diseases in the nursing child, as dyspepsia, colic, enteric catarrh, occurring during menstruation in the nurse, should be regarded as coincidences and, therefore,

4. Should not, *a priori*, be treated by a change of nurses (or artificial alimentation), but should be managed in the usual way (by medication and regulation of the length of the nursings and of the intervals between them).

These statements are in accord with our own opinion, based on clinical observation, that menstruation, not excessive in amount or duration, nor accompanied by other pathological conditions, does not, of itself, interfere with lactation.

MORE MEDICAL IGNORANCE.

IN THE MEDICAL NEWS for November 16, 1889, we called attention to the answers which had been given by some of the candidates before the Medical Examining Board of Virginia, and now our attention is called to an editorial article in the *Northwestern Lancet*, giving some of the answers to the questions of the medical examiners of Minnesota. In one instance the candidate stated that "The symptoms of œdema of the glottis are that the patient

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feels husky and has sore throat. I would amputate, if necessary; I would do the operation within three or four months, if it was a bad case." "The dose of the sulphate of morphia for a child of five years, hypodermically, would be one-quarter of a grain, and if that did not give relief I would give half a grain." To the question, "What is an element?" the answer was given, "Earth, water, wind, and fire." Trismus neonatornm was defined as "A peculiar trouble of the eye, generally congenital, with falling of the lids, which give an unnatural look to the ordinary face of a child." Another candidate stated that "The sympathetic system is composed of all the filaments of nerves that start from the spinal cord and are destributed to all parts of the system, especially the brain. The cervical portion ramifies the encephalon in general. The dorsal portion ramifies the anus." Another enterprising individual, when asked for the distinctive histological features of carcinoma, replied that "Carcinoma will show a general dropsical condition, transparent condition of all the fluids except the urine, which may show considerable deposit, scanty and hot. The patient's puls is heavy, large, does not care to move."

In the editorial to which we have already alluded, we attempted to show that the lack of interest on the part of the laity and some members of the profession is constantly endangering the lives of a very large portion of the inhabitants of this country.

Is it not possible for physicians once more to make an effort to obtain some such law in Pennsylvania as they have in Minnesota? And is it not a crying evil that one of the younger States of the Union should be so far in advance of one of the oldest?

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

THE PRESIDENT, GEORGE W. JACOBY, M.D., IN THE CHAIR.

DR. IRA VAN GIESON read a paper entitled,

A CONTRIBUTION TO THE PATHOLOGY OF THE LARYNGEAL AND OTHER CRISES IN TABES,

and described a case of tabes with laryngeal attacks during the last year of illness. One of the crises proved fatal. Microscopical examination showed the lesions of a chronic neuritis of the roots of the vagus and accessory portion of the spinal accessory nerves on both sides. Neuritis of the root fascicles or trunks of one or both of these was regarded as more frequently the cause of the laryngeal crises than central lesions.

The author divided laryngeal crises into two classes: First, those in which the glottis constrictors and dilators were normal and the crises occurred from reflex spasm of the adductors. Second, a larger class of cases in which the constrictors and dilators were in a greater or less degree of paralysis.

The first form of the crises might be produced by a neuritis of the roots of the accessory portion of the eleventh nerve, irritating the sensory fibres of the larynx, and being responded to by motor impulses through the vagus, which would produce closure of the glottis by contraction of the adductors. The second form of the crises might be produced by a destructive stage of the neuritis in the vagus, inducing a motor inability of both the adductors and abductors. But as it has been shown experimentally in animals that the adductors are stronger than the abductors, a reduction of power in both sets of muscles would render the equilibrium of the two sets of muscles so unstable that reflex irritation of the motor laryngeal fibres, or direct irritation of these fibres in the vagus by the neuritis would be responded to by a contraction of the stronger adductors, analogously to the results of artificial stimulation of the motor larnygeal fibres in animals. When the neuritis affects both the vagus and accessory nerves together the conditions are favorable for the production of violent crises. A localization of the lesions causing the other crises in tabes was based on Gaskell's description of the distribution of the sympathetic system.

DR. A. SCHAPRINGER presented a case of

CONGENITAL BILATERAL ABDUCENS PARALYSIS WITH FACIAL PARALYSIS.

The patient was a girl, eight years old, with congenital paralysis of both facial nerves and inability to rotate the eyeballs either to the right or to the left. Rotation of the eyeballs upward and downward was unimpaired, as was convergence. This condition of the motor apparatus of the eyeballs is termed by certain authors "bilateral abducens paralysis," which designation Dr. Schapringer considered insufficient and misleading, and he therefore proposed the term "bilateral pleuroplegia" as a substitute. There were only four similar cases on record, viz., one each described by Alfred von Graefe, G. C. Harlan, Julian Chisolm, and P. J. Moebius. Other coexistent anomalies present in the child were: a protuberant glabella, bilateral epicanthus, a slight deformity of the terminal phalanx of the left index-finger, a bifid uvula, and a sunken sternum representing a rudimentary form of "funnel chest." There was also a partial implication of the motor portion of the fifth and of the hypoglossal nerves.

Dr. Schapringer considered the phenomena within the sphere of the cranial nerves as due to a lack of development of the brain involving the nuclei of the fifth, sixth, seventh, and twelfth nerves.

DR. C. A. HERTER then read the history and report of the autopsy of a

CASE OF CERVICAL PARAPLEGIA FROM DISLOCATION.

J. F., a mason, fifty-seven years of age, fell head first from a scaffolding, a distance of twelve feet, striking with his head against a board. The patient was conscious on admission to the hospital. Examination failed to elicit evidence of fracture or dislocation in any part of the

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cervical spine, but there was great tenderness of the sixth and seventh vertebræ. There was complete motor paralysis below the arms. The forearms and arms were normal, but there was weakness of the muscles of the hand. There were also anæsthesia and analgesia of the lower extremities, and of the trunk extending high on the chest. On the arms the anæsthesia involved, roughly speaking, the distribution of the ulnar, internal cutaneous, and lesser internal cutaneous nerves, and was symmetrical.

With the exception of the plantar reflex of the left side, both superficial and deep reflexes were absent when the patient was admitted. There was a cincture pain about the lower part of the neck, and above and below the clavicles there was hyperalgesia. Below the neck there was pronounced myoidema, and fibrillary contraction could readily be elicited. Respiration was purely diaphragmatic; temperature on admission 97.2°. Retention of urine and incontinence of fæces.

Nine hours after admission the sensory loss was unchanged, but the motor paralysis had spread, so as to involve the flexors and extensors of the wrist, the triceps, and to a less extent the pectoralis major, and the pronators and supinators. Very slight power remained in the biceps. Respiration continued diaphragmatic. The pulse was somewhat feebler than on admission, but good. The temperature had risen during the afternoon following admission to 104°.

On the day following admission the patient's condition was about the same, except that the biceps was somewhat feebler. During the afternoon of this day there was some embarrassment of respiration, and on the second day after admission the patient died from respiratory failure, having survived the injury forty hours.

The autopsy revealed a dislocation forward of the sixth cervical vertebra, and an oblique fracture through the left superior articular process of the sixth vertebra. The forward displacement of the sixth vertebra was probably not more than one-third of an inch. How much pressure was being exerted on the cord at the time of the autopsy could not be determined. Examination of the cord showed that the eighth cervical segment was extensively disintegrated, and that the seventh was considerably softened by the displacement of the vertebra. At the junction of the sixth and seventh segments the central canal was distended by hæmorrhage, and there seemed to be some extravasation into the surrounding gray matter. Above the sixth segment the cord was normal. The case supported the view that the peculiar distribution of the sensory disturbance noted in the upper extremities depended on a lesion of the eighth cervical and first dorsal segments, and that in this case the biceps was represented at a lower level than is considered usual—*i. e.*, in the lower part of the sixth segment.

CORRESPONDENCE.

PARIS.

Typhoid Fever in Paris.

To the Editor of THE MEDICAL NEWS.

SIR: Before entering upon this subject, it is necessary, I think, to explain in as few words as possible, the distribution of drinking water in the city of Paris.

In this city, water is derived from several sources: spring water and river water (Seine water). The spring water is very scarce, and is only distributed to a certain number of the twenty districts into which Paris is administratively divided. This spring water is obtained through canals as near to the source as possible, so as to prevent its pollution by passing through crowded cities. The quantity, however, is very small, as compared to the amount used by the whole city; hence, the water of the Seine, which passes through Paris, after having passed through several large cities, is used. This has become infected by the sewage of the other cities before it reaches here, and is supplied to the majority of the districts. I must say, however, that the city is now engaged in extensive works to secure a spring water supply, so as to be able to avoid altogether the consumption of river water by the inhabitants, which is now plainly proven to be the cause of the large amount of typhoid fever in Paris.

The authorities, as a matter of justice to all the inhabitants, have conceived the idea of giving spring water for a certain length of time to many districts of Paris, while during the remainder of the year these same portions of the city are supplied with river water; each district taking its turn. The result of such a distribution is the dissemination of typhoid fever throughout all the districts instead of keeping it localized to a certain number.

About three years ago, two prominent and well-known physicians of Paris, Professor Chantemesse and Dr. F. Vidal, stated that the Seine was the principal cause of the typhoid fever epidemic observed in this city; founding this opinion on the fact that whenever *river* water was distributed to a certain number of districts, three weeks later the number of typhoid fever patients admitted into the hospitals from these quarters was three or four times greater. Some physicians at the time objected to this opinion, and believed that the real cause of the disease was not the distribution of water, but the influence of the season; as in summer, the number of cases of typhoid fever is always high. They claimed that the contamination by water was a mere coincidence. To this the above-named gentlemen rightly objected, that during the winter of 1887, an accident having occurred to the canal which brings the spring water to Paris, the river water replaced it for several weeks, and during that time the mortality from typhoid fever ran up to as high a percentage as in the middle of the summer.

Another objection was, that if the Seine water was the real cause of the disease, the disease would only present itself in quarters where this water is distributed, while cases of typhoid fever are observed in districts receiving spring water. But the objectors forgot the fact that most of the persons who are liable to be attacked by typhoid fever, young men, are, during the day, in different parts of the city, where river water is used.

The year 1888, having been a very rainy one, and consequently the amount of water used for sprinkling the streets having been greatly decreased, river water was not substituted for spring water in most of the districts, and the statistical results show that at the end of the year the percentage of deaths from typhoid fever had decreased to a smaller number than for thirty years. Observing the statistics we find, that while spring water was

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being distributed to the city, the number of cases of typhoid fever admitted in the hospital was as follows:

April 7, 1889,	to	April	13th,	.	.	22	cases.
" 21,	"	"	27th,	.	.	15	"
" 28,	"	"	May 4th,	.	.	26	"
May 5,	"	"	11th,	.	.	47	"
" 12,	"	"	18th,	.	.	33	"

On May 25th, the city authorities began to substitute river water for the spring water, and we find the following number of entrances:

May 26th	to	June	1st,	.	.	18	cases.
June 2d	"	"	8th,	.	.	26	"
" 16th	"	"	22d,	.	.	39	"
" 23d	"	"	29th,	.	.	48	"
July 7th	"	July	13th,	.	.	73	"
" 21st	"	"	27th,	.	.	127	"
Aug. 4th	"	Aug.	10th,	.	.	120	"
" 11th	"	"	17th,	.	.	129	"

As was previously indicated by MM. Chantemesse and Vidal, it will be observed that three to four weeks after the substitution of Seine water for the spring, the cases of typhoid began to increase, and became more and more numerous as more river water was given. The number of deaths is much greater in those districts which use river water.

It remains now a fact well proven, and admitted by all physicians in Paris, that the mortality from typhoid fever is three to four times higher in districts supplied with river instead of spring water.

Dr. Schneider, of the French army, has made similar observations to the preceding, in the Department of War. While spring water was distributed to the troops only ten cases of typhoid fever were observed in the whole Paris garrison during the month of October. On October 31st, for some reason, river water was substituted, and from November 8th to November 21st, 14 cases entered the military hospitals; from November 22d to November 30th, 34 cases; and from December 1st to December 12th, 41 cases were admitted. As an additional proof, five barracks, including about five hundred soldiers, were kept on spring water, and during the period from November 22d to December 12th, which was particularly unfavorable, as shown above, not one single case of typhoid fever was observed in those barracks. Hereafter the Secretary of War has decided, that nothing but spring water shall be distributed to the soldiers.

The bacteriological researches made by Professor Chantemesse and Dr. Vidal, in the early part of 1887, led them to the conclusion that the only safeguard against typhoid fever, for those who were compelled to drink river water, was to have the water boiled for at least ten minutes.

MILWAUKEE.

To the Editor of THE MEDICAL NEWS,

SIR: The city of Milwaukee can hardly be considered a medical centre. It has not its struggling, poorly supported and half-equipped medical college or university which is the boast and burden of the local profession of many cities of lesser size and importance. It is doubtful if there is another American city of the size of Milwaukee without its one or more medical colleges. In these days of multiplying institutions of medical instruction, this fact is not to be regretted by those who look to the best interests of higher and more thorough medical education.

The city contains a population of two hundred and ten thousand, with about the average proportion of doctors, among whom are representatives of almost every medical college in the United States, and a considerable proportion of graduates of foreign institutions. The climate and location make it one of the healthiest of American cities. Although the population is largely foreign, the intelligence and hospitality of its people render it a most desirable place of residence.

With hospitals Milwaukee is fairly well supplied. The Milwaukee County Hospital is located at Wauwatosa, a suburb just west of the city. The removal of this hospital to the city is a subject discussed among the physicians and the county officials, but the question is still undecided. By the majority of the physicians of the city it is thought that the usefulness of the institution, both to the public and to the profession, would be largely increased by its removal; there are, however, hospitals within the city where cases of injury and disease may be well cared for, and the question at issue is, perhaps, one of economical management rather than one of necessity. Within the city proper, St. Mary's Hospital and Passavant Hospital are the two leading institutions, each with its appointed medical and surgical staff. The hospitals just named both admit charity cases upon proper recommendation, and also afford facilities whereby a patient may be furnished with a bed or private room, and be treated by any physician whether he be a member of the hospital staff or not. With these should be mentioned St. Joseph's Hospital and the Emergency Hospital. The latter has been established about a year and a half, has an efficient medical and surgical staff, is the most centrally located, and the work done since its establishment has fully demonstrated the necessity for such an institution. The Elms Hospital for Women and Trinity Hospital are private institutions.

The Wisconsin Training School for Nurses, attached to the Milwaukee County Hospital and the Elms, also deserves mention in this connection. It is an institution conceived and conducted by a number of benevolent and enterprising ladies of the city, their first annual report appearing in October last. The work already done and the evidence of an extending field of usefulness are in every way creditable and encouraging to the promoters of the institution.

There are several medical societies in which the profession of the city are represented, but none exists in which the physicians of the city are interested as they should be. A good city medical society is at present a *desideratum*. The Society of German Physicians and the Clinical Club are good in their way, but the membership in both is limited. About one-fourth of the physicians of the city are members of the State Society, and a still smaller proportion are members of the Rock River Medical Society, a district society which with its quarterly meetings has the reputation of doing most excellent society work.

We have in our city the best medical library west of Philadelphia, a private collection of twenty thousand volumes; the hospitality of its shelves is kindly extended to the profession of this and neighboring cities by its

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generous owner, Dr. Senn. The Clinical Club has in its rooms a good collection of books, numbering about a thousand volumes, the library of the late Dr. John K. Bartlett, with some additions. The Club also places before its members a very complete list of medical periodicals, both American and foreign. To this collection of books and current literature the profession of the city may also have access.

A somewhat amusing case has recently come up in our city court. It appears that some time after an external urethrotomy, a man died suddenly, and the physician who made the autopsy, observing a fistulous opening in the cicatrix, stated incidentally that the subject was an hermaphrodite. This getting into the hands of a reporter, and appearing in one of the city papers in an objectionable way, the widow of the deceased sued and recovered damages in small amount from the newspaper.

Dr. Senn has recently received an invitation tendered by the Committee on Surgery, and by von Bergmann, President, of the Tenth International Medical Congress, to be present at Berlin in August next, and deliver a lecture on intestinal surgery, with demonstrations—a fitting honor to one who, by reason of his skilful and original investigations, stands, in this special department of surgery, *facile princeps*. The invitation has been accepted.

BALTMORE.

To the Editor of THE MEDICAL NEWS,

SIR: On December 17th a movement was started in the city of Baltimore, having for its object the improvement of medical education primarily in Maryland, and secondarily all through the United States. In order that a meeting might be held, consisting of the most representative and most interested men on this subject, the following letter was widely distributed among the profession, and signed by the most prominent men in Baltimore and Maryland:

"With a view to joint action on the part of our five medical schools, it is proposed to hold a meeting of representatives from the faculties to discuss the feasibility of introducing reforms. It is thought that a joint action will render the difficulties to be met easier to deal with, and it is hoped that your interest in higher medical education will induce you to bring the matter before your faculty at the earliest practicable moment, with a view to the appointment of a committee of conference. January 15th at 1 P. M., the hall of the Medical and Chirurgical Faculty of Maryland, is named as the time and place of the meeting. Yours respectfully,

"JACKSON PIPER AND OTHERS."

In response to this call, a meeting of the representatives of the various colleges in Baltimore was held on January 15th, and was largely attended. As a result of the meeting, the following circular was drawn up and the secretary instructed to send a copy to all the Medical Schools and Boards of the United States:

"*To the Medical Colleges of the United States:* The Baltimore medical colleges and the Johns Hopkins Hospital, having met for the consideration of reforms urgently needed in the system of medical education hitherto in operation in this country, after a full discussion of this most important subject, have come to the conclusion that it is not expedient, nor, indeed, practicable, for the medical schools of any State to assume alone the responsibility of adopting advanced methods; yet, fully convinced of the pressing need of a change, and earnestly desirous to see it consummated, they are unwilling to let matters rest longer as they are, without at least an effort on their part to improve them. They have determined, therefore, to issue this appeal to the medical schools of the United States for their coöperation in inaugurating a national advance. Fully aware of previous ineffectual efforts in this direction, they yet realize that times have greatly changed since those efforts were made, and they believe that a repetition of them at this time would have a good prospect of success. The approaching meeting of the American Medical Association, drawing delegates, as it will, from every part of the country, offers a good opportunity for convening those who are interested in the contemplated change. We therefore invite you to join with us in holding a conference for the full consideration of 'medical education in this country, and measures for its improvement,' and we request that you will appoint at your earliest convenience one or more delegates from your faculty to represent it at a meeting to be held at Nashville, Tenn., on the 21st of May, 1890, at 3 P. M. It is requested that delegates should be instructed as far as possible as regards the wishes of their faculties upon the various measures now proposed in connection with advances in medical instruction, in order that definite results may be arrived at with the least possible delay and trouble. The following subjects are considered as most likely to come up for discussion:

"1. Three years' course of six months' sessions.
"2. Graded curriculum.
"3. Written and oral examinations.
"4. Preliminary examination in English.
"5. Laboratory instructions in chemistry, histology, and pathology."

OLDEST LIVING GRADUATE OF THE UNIVERSITY OF PENNSYLVANIA.

To the Editor of THE MEDICAL NEWS,

SIR: An item in a recent number of THE MEDICAL NEWS states that Dr. I. L. Coffman, of Phœnixville, Pa., is said to be the oldest living graduate of the Medical Department of the University of Pennsylvania, he having been practising sixty-one years. It may be of interest to note that Dr. T. T. Slaughter, of Madison County, Va., who has practised medicine continuously up to within the last year, graduated from that institution in 1825, and practised his profession for sixty-four years. He is now in the eighty-sixth year of his age.

Yours truly,
R. W. SLAUGHTER.

NEWS ITEMS.

Modern Dissecting Tables.—At the Morgue in New York City new dissecting tables are to replace the antiquated ones now in use. They will be fitted with movable gas-jets, hot and cold water, and spray pipes, and an adjustable joint, so that the bed of the table may be shifted to

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any angle desired. A newspaper item quotes one of the medical attachés of the Coroner's office as saying that the cost of a modern table is between $500 and $800, according to the completeness of its outfit.

An Antirabic Institute at New York.—A Pasteurian Institute was inaugurated in New York City, in a very quiet way, on February 16, by Dr. Paul Gibier, recently of Paris, the director of the institute. He will be assisted by Drs. Van Schaick and Lieutard. The present location of the institute is No. 198 West Tenth Street, where it will be conducted by Dr. Gibier at his own expense, and the poor will be treated free of charge, as is done by Pasteur in Paris. Dr. Gibier was, for many years, the first assistant to Pasteur; and it is by the advice of the latter that the undertaking has been located at New York. One patient, a boy, has already been admitted to the institute, and is under treatment by Dr. Gibier.

A Bogus Hospital receives Public Money.—The "Sanitarian Hospital" of Brooklyn is under a cloud. Its proprietor has been indicted by the grand jury for larceny, on account of obtaining charitable funds from the public treasury without furnishing a hospital service. The indicted physician is said to be an eclectic, and extracts from his so-called minutes show that he is without education, few words being correctly spelled.

Medical Examinations in Germany.—The last annual report of the Board of Medical Examiners of Prussia shows that of 683 candidates, 504 were passed; the percentage of successes being 74, failures 26.

Regulation of Medical Practice in the District of Columbia.—A bill has been introduced into the Senate of the United States establishing a Board of Medical Examiners in the District of Columbia. This board will be composed of ten physicians or surgeons, five practitioners of homœopathy, and three dental surgeons. The term of office, according to the bill, will be four years.

The Value of American Diplomas in Berlin.—A cablegram states that much indignation has been aroused in the two hundred American medical graduates in Berlin, because the authorities at the university have determined not to recognize as valid any diplomas issued by medical colleges in the United States.

Surgeon T. H. Parke.—Surgeon Parke is temporarily doing duty at the hospital at Cairo. The following paragraph was written by a correspondent who accompanied the Stanley party on their way to the coast: "Surgeon Parke is a young medical officer of the British army, and a native of Dublin. Like Stairs, he had to obtain leave of absence for the purpose of joining the expedition, and he is also a volunteer serving without pay. On all sides the correspondent heard nothing but the highest praise of Parke. Surgeon Parke met Emin Pasha at the same time as Stanley did, and was present at their first memorable interview." He is but twenty-six years old.

A Possible Source of Lead-poisoning.—According to Mr. Herbert Whitby, of England, a possible source of lead-poisoning in that country exists in the "tons upon tons of lead scattered over the land by sportsmen. In some places on the moors the ground is literally paved with lead, and the effects are terrible to contemplate when it is considered that water from the moors forms part of the water-supply of many towns." Fortunately for us, it must be many years before such a danger can exist in this country.

Death from Snakes and Wild Animals in India.—According to the *Indian Medical Gazette*, the total number of people killed in India by wild animals and snakes, in 1887, was 22,348; in 1888, 22,900. Whether this increase can be accounted for by a proportionate increase in population, and migration to new sections of the country, is not stated.

Obituary.—DR. RICHARD D. LEE, one of the senior members of the medical profession in Harford County, Maryland, died suddenly on February 4th. He was found dead in his carriage, in the public road, near Bellaire. Dr. Lee was graduated in 1848 from the Washington Medical College at Baltimore.

—— DR. HEINRICH FREY, of Zurich, died January 23d, of apoplexy supervening upon an attack of epidemic influenza. He was Professor of Anatomy in the University of Zurich, and was well known in the scientific world by his works on the microscope and on histology, which have been translated into the principal European languages. He was in his sixty-ninth year.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 18 TO FEBRUARY 24, 1890.

By direction of the Secretary of War, the retirement from active service, on February 9, 1890, by operation of law, of ANDREW K. SMITH, *Colonel and Surgeon*, under the provisions of the Act of Congress approved June 30, 1882, is announced. Colonel Smith will proceed to his home.—Par. 1, *S. O. 34, A. G. O., Washington, D. C.*, February 9, 1890.

RAYMOND, HENRY J., *Assistant Surgeon.*—Is promoted to be Assistant Surgeon with the rank of Captain, after five years' service, in accordance with the Act of June 23, 1874.

KNEEDLER, WILLIAM L., *Captain and Assistant Surgeon.*—Upon being relieved from duty by Captain Robinson, will report at Jackson Barracks, Louisiana, for duty at that station, relieving Freeman V. Walker, First Lieutenant and Assistant Surgeon. Upon being relieved, Assistant Surgeon Walker will report at Fort D. A. Russell, Wyoming Territory, for duty at that station.—Par. 4, *S. O. 43, A. G. O.*, February 20, 1890.

ROBINSON, SAMUEL Q., *Captain and Assistant Surgeon.*—Now on duty at Fort Hamilton, New York, is relieved from duty in the Division of the Atlantic, and will report in person to the Superintendent U. S. Military Academy, West Point, New York, for temporary duty at the Academy, to relieve William L. Kneedler, Captain and Assistant Surgeon.—Par. 4, *S. O. 43, A. G. O.*, February 20, 1890.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

SOME CASES TREATED WITH IODOL.

BY DAVID CERNA, M D.,
ASSISTANT IN THE LABORATORY OF EXPERIMENTAL THERAPEUTICS IN THE UNIVERSITY OF PENNSYLVANIA.

ALTHOUGH comparatively a new remedy, iodol has already been used somewhat extensively by various practitioners in the treatment of those diseases especially for which iodoform has been employed.

This therapeutic agent was brought into notice, in 1885, by Vulpius, of Heidelberg, and by Dr. G. Mazzoni,[1] of Rome, both of whom employed it as an antiseptic in the treatment of wounds. Following these writers, many surgeons and general practitioners have used iodol for the same and other purposes with the most happy results.

Without going into an examination of the literature of the subject, regarding the physiological and therapeutical action of the drug, I may state in general that iodol has been employed advantageously, by various observers, in the treatment of eye affections, and in such diseases as adenitis, blennorrhagia, vaginal catarrh, tubercular laryngitis, and in others of syphilitic origin. It has been found of great service in the treatment of buboes, chancres, and ulcers in general, and has also been used as an internal remedy in most stages of syphilis and scrofulous affections.

In private practice, I have given a fair trial to this new drug, and obtained, in many instances, most excellent results. Among the cases the following are the most important:

CASE I.—R. H., male, of lymphatic temperament, aged fifty-five years, grocer by occupation, had a phagedenic ulcer in lower third of left leg. He had been suffering for about a year, and during that time was treated by several quacks but without avail; he constantly grew worse. When I first saw the patient he was in a bad condition, and suffered greatly both mentally and physically. The ulcer was five centimetres in length, three in width, and one in depth; of irregular form, and, as I have said, phagedenic in character, covered with vegetations which secreted a muco-purulent discharge: edges ragged, indurated, and pigmented; no local, or very slight, venous congestion. Close examination of the patient revealed no syphilitic history. A ten days' local treatment with a solution of corrosive sublimate (1 : 1000), iodoform, a cotton pad and bandaging, did the patient no good. Discontinuing this treatment, I immediately began the use of iodol. The ulcer was cleansed with the bichloride solution, then dusted over with the powdered iodol, using, as previously, the absorbent cotton pad and light bandaging from the foot to a little below the knee. Next day I was surprised to notice a great improvement. The bad odor had disappeared, the edges of the ulcer were much softer, the discharge was lessened in amount, and several cicatricial points had begun to appear. The patient remarked to me that soon after the application of the drug he felt a pleasant itching or tingling sensation which lasted several hours. The same treatment was continued, and a steady improvement observed, until the twenty-eighth day, when the patient was discharged cured.

CASE II.—Mrs. A. C., aged fifty years, housewife, of sanguine temperament. Had been troubled for several months (could not tell the exact time) with ulcerations of both legs; otherwise she appeared to enjoy comparatively good health. It appears that several years ago she suffered from a scrofulous affection as revealed by certain cicatrices on both sides of her neck. Her history, and especially her family's, showed that there was some syphilitic taint in her constitution. On the middle third of the right leg there was an ulcer which was almost round, its mean diameter being three centimetres, its depth one centimetre; edges ragged, hard, somewhat reddened, and on the surface were ugly vegetations discharging an abundant, white, viscid liquid, which had a very disagreeable odor; lesion very tender and bled to the simple touch. There was another ulcer on the left leg, situated on the lower third, and was three centimetres in length, two in width, and about one in depth; in every other respect this presented almost the same characters as the other; but here was noticed a varicose condition of the veins, and the pain and bleeding of the ulcer produced by simple touch were very pronounced. The patient was placed upon ten-grain doses of iodide of potassium daily, and a simple nourishing diet. The ulcers, after being washed with a solution of bichloride of mercury (same strength as last, which is the solution I have generally used in such cases), were touched with nitrate of silver, covered with a cotton pad, over which was placed the usual bandage. This treatment was continued for a week with no apparent good results, either on the general health of the patient nor on the local trouble. The internal administration of medicine was stopped. Iodol was resorted to, and with a view of making a comparative study, iodoform was also employed. The ulcer on the right leg was treated with the former, that on the left leg with the latter drug. The usual dressing was applied to both ulcers. On the next day I found that the lesion of the right

[1] Berliner klinische Wochenschrift, 1885.

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limb, the one on which iodol was used, presented the most encouraging results; the bad odor had disappeared, its surface was perfectly clean and free from the crust which iodoform is so apt to form; the indurated borders were much softened, and there was a marked diminution in the viscid muco-purulent discharge. In the ulcer treated with iodoform no improvement was noticed, and it had almost the same appearance as on the previous day. This patient spoke to me also of the agreeable tingling sensation felt in the right ulcer, soon after the application of iodol, and which lasted for several hours. This course of treatment was pursued without interruption, and at the end of three weeks the disease of the right side had entirely disappeared, leaving a good cicatrix. The one treated with iodoform had scarcely improved at all, so that this drug was discontinued and iodol used, and eventually the happiest results were observed. In two weeks longer the patient was completely cured and advised to wear rubber stockings.

CASE III.—E. N. G., aged thirty years, of nervous temperament, tailor by trade, applied to me for treatment with two ulcers in the lower third of the left leg, fibular surface, and one on the right leg, also fibular surface, situated on upper third. History revealed a syphilitic taint, the disease having been contracted about eight years before. When he applied to me he was suffering from terrible dyspeptic symptoms, which had greatly weakened his constitution. A few months previously, while under medical treatment, he expelled several yards of tapeworm. His health, however, was but little improved. The ulcers of left leg were about the same size, and measured three and a half centimetres in length, two in width, and one in depth; hard, reddened contours; ragged irregular edges; granulations ugly and oozing pus of a very disagreeable odor. The one on the right leg, five centimetres in length, three in width, and about one in depth, bore almost the same characters as the other two. These were subjected to iodol treatment, while on the other one iodoform was employed. Patient was placed on iodide of potassium, ten grains daily, but the salt was discontinued at the end of six days, owing to aggravated symptoms of dyspepsia, intense frontal headache, and marked coryza—all unmistakable signs of iodism. The ulcers treated with iodol soon showed marks of improvement, and in three weeks were entirely cicatrized; the one under iodoform presented no changes in the same period of time, and was subsequently subjected to iodol with good results.

CASE IV.—F. G. S., male, aged forty-five years, of lymphatic temperament, carpenter by trade, was suffering from a tubercular syphilide, involving left ear and end of nose; had contracted the disease about ten years before, and while laboring from secondary symptoms, his wife had two abortions, and a child had died within a year of its birth, undoubtedly from syphilitic disease. The patient was placed upon iodide of potassium, eight grains daily, but in a short time gastric disturbance, frontal headache, and other untoward symptoms of iodism were developed, and the drug was suspended. After several days the medicine was tried again, but only to produce the same disagreeable effects. It was finally discontinued and iodol resorted to. This drug was employed in doses of three grains three times a day, and the writer was pleased to see rapid improvement of the patient, who within six weeks was entirely relieved and cured, for the time being at least, of his local trouble. No constitutional effects were produced by this medicine with the exception of slight diarrhœa, which completely disappeared soon after the discontinuance of the drug. No local treatment was employed.

CASE V.—The next case was that of N. G., aged thirty-eight years, a laboring man, of sanguine temperament, who came under my observation with a well-defined phagedenic ulcer of the fauces, involving, to a certain extent, the soft palate and uvula. Cross-examination of the patient revealed a syphilitic history of twelve years' standing. He now suffered from difficulty of swallowing, regurgitation through the nostrils, and snuffling. As regards his general condition, he was a perfect wreck. I immediately placed him upon a strict dietetic regimen, and began the local application of iodol by means of a spray of an ethereal solution. Being a case of a distinct tertiary form of syphilis, and one of the most aggravated types at that, iodide of potassium and protiodide of mercury, twenty grains of the first and half a grain of the second drug were prescribed alternately every other day. The appearances of the local lesion improved rapidly, but, at the end of two weeks, the worst forms of iodism and ptyalism ensued, and, of course, the drugs were suspended. I now resumed the administration of the potassium salt alone, in the dose of twelve grains daily, and a few days afterward the untoward efforts of this therapeutic agent presented themselves, which caused me to abandon it and substitute iodol, also internally, beginning with small doses and gradually increasing the amount to as high as twenty grains a day. At the end of three months from the commencement of the treatment the ulcer was entirely healed, swallowing and the voice returned to normal, and the patient, who, in his own words, "never felt better in his life," was discharged.

The use of iodoform in diabetes mellitus by Moleschott,[1] referred to by Professor James Tyson, of the University of Pennsylvania, in his excellent article on this disease,[2] suggested to me the idea of employing iodol in that affection, as a trial, and I have to report one case in which good results were obtained.

CASE VI.—A. E., aged thirty-eight, of nervous temperament, farmer, came under my professional care with the following symptoms: Frequent micturition, especially at night, loss of appetite, great thirst, a disagreeable dryness of the mouth and fauces, and general emaciation. The quantity of urine was certainly greater than normal; he passed, the second day after I first saw him, a little more

[1] Wiener medicinische Wochenschrift, Nos. 17, 18, 19. 1882.

[2] A System of Practical Medicine by American Authors, edited by Professor William Pepper, vol. ii. p. 228.

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than three quarts. Microscopical and chemical examination of the urine showed a few epithelial cells, and a very large amount of sugar with Fehling's test. The urine was acid in reaction, with a specific gravity of 1022. Lack of time and of proper apparatus on the occasion prevented me from making an accurate quantitative analysis. The patient was placed on an exclusive milk diet and six grains of iodol daily. Examinations of the urine were made every second day, and it was found that *pari passu* with the decrease in the amount of the fluid there was a marked reduction of the sugar. In one month the sugar was greatly diminished, and the general health of the patient improved in every respect. At the end of two months the diabetic condition of the urine had entirely disappeared, and the patient was discharged as cured.[1]

These are some of the most important cases that have come under my observation, and in which, as may have been noticed, I have had the most excellent results from the use of iodol. These results are certainly very encouraging, and further trials should be given the drug as a local and systemic remedy. Rich as it is in iodine, there is no doubt that its properties are due to this element, as is the case with iodoform; but over iodoform it has advantages, one of the chief being its lack of the disagreeable odor so characteristic of the latter drug. This advantage will be, and is, most noticeable in the treatment of local affections, such as chancres, vaginal catarrh, adenitis, buboes, blennorrhagia, ulcers, and other diseases, particularly in private practice.

Sufficient evidence, I think, has already been brought forward as to the great value of iodol as an internal remedy chiefly in cases that require alterative treatment.

I suggest the internal employment of this new and powerful drug, especially in those syphilitic cases, even of the worst type, which, owing to idiosyncrasies or what not, will not bear long the constitutional effects of mercury and iodide of potassium.

In conclusion, I may state that with regard to the local application of iodol, I have employed it either in powder, solution, or as an ointment. Solutions can be made in alcohol (one part to three), or ether (one to four). I have generally used it as an ointment, one part to four or five of vaseline. Internally, I have given, as it may have been observed, as much as twenty grains a day; but, on high authority,[2] larger doses (thirty to forty-five grains daily) may be employed without producing untoward constitutional effects.

[1] I saw this patient a little over a year afterward. He had gained several pounds in flesh, and appeared to enjoy the best of health. He was then the father of two healthy children (twins).

[2] Pick: Therapeutische Monatshefte, No. 1, 1887.

NOTE ON THE USE OF TURPENTINE IN TYPHOID FEVER.

BY H. C. WOOD, M.D., LL.D.,
PROFESSOR OF THERAPEUTICS IN THE UNIVERSITY OF PENNSYLVANIA.

THE most useful articles in a medical journal are not those which are the most original, and certainly if lack of originality be a spice of value, the present note in regard to the oil of turpentine in typhoid fever will be well flavored. The employment of the remedy I believe originated with Dr. George B. Wood, and was certainly very strongly inculcated by him, so that it has been amusing and instructive when from time to time, especially in some of the English journals, it has been brought forward as a new discovery by medical writers. Dr. George B. Wood taught that the oil of turpentine acts as a local remedy in typhoid fever, and that there are two stages of the disease in which it is especially useful. The first is at the end of the second week, when the tongue becomes especially dry and glazed, and the abdomen very distinctly tympanitic, with or without the coexistence of diarrhœa. The second period in which the remedy was especially used by the former Professor of Therapeutics in the University was during convalescence, when the perpetually recurring diarrhœa, with lack of digestive power, indicated failure of some of the intestinal ulcers to heal. For nearly twenty-five years I have been following the practice of my predecessor, and I am very thoroughly convinced by experience in hospital and in private practice that many lives would be saved if the oil of turpentine was more freely used in this disease. I do not believe that it is possible to reach the ulcerations in the small intestine with nitrate of silver, or other similar readily decomposable or readily absorbable remedy. The volatile oils are absorbed slowly, and are rapidly vaporized at the temperature of the human abdomen, so that there can be no reasonable doubt that, either in the form of liquid, or more probably in the form of vapor, when given freely by the mouth, that they get into contact with the mucous membrane of the upper intestine. It has become my routine habit to give the turpentine in every case of typhoid fever, beginning about the twelfth or fifteenth day, and I believe if its use were habitual in the profession there would be much fewer cases of intestinal hæmorrhage or other severe symptoms due to a local lesion.

In my own case convalescence from typhoid fever was exceedingly slow on account of the perpetually recurring diarrhœa, and when at the instance of Dr. George B. Wood himself, then an old man nearly eighty years of age, the turpentine was exhibited, the local symptoms were relieved immediately. Four or five times I experimented by stopping the turpentine, and when local symptoms had returned, on giving the turpentine again, would see them abate within

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twenty-four hours. The effect of the drug was scarcely mistakable. The turpentine may be disguised by means of glycerin and a volatile oil made into an emulsion, which is rarely objected to by patients. Ten or fifteen drops should be given every two hours during the day, the patient being allowed to rest at night. The following formula will be found satisfactory:

℞.—Ol. caryophylla . . . . gtt. vj.
Ol. terebinth. . . . . fʒjss.
Glycerin, }
Mucil. acaciæ, } . . . āā fʒss.
Syrup, }
Aquæ, } . . . . āā q. s. ad fʒiij.—M.

Sig.—Dessertspoonful as directed.

A STUDY OF VILLOUS TUMORS OF THE BLADDER.[1]

BY CHARLES N. DIXON JONES, M.D., B.S.,
OF BROOKLYN, NEW YORK.

WHENEVER a case of severe and often-repeated hæmaturia comes under observation, the physician has a specimen of the bloody urine submitted to an examination with the microscope, in order to establish a correct diagnosis in regard to the site and cause of the hæmorrhage. Such a diagnosis cannot, however, always be obtained, even though the examination be undertaken by the most skilful microscopist, and especially is this so if the amount of blood present in the urine be excessive. An experienced microscopist may spend many hours of faithful examination without being able to determine the seat of the hæmorrhage.

Every hæmorrhage in the genito-urinary tract must, of necessity, cause a detachment of a certain number of shreds of connective tissue. Between the walls of the bloodvessels and the outer covering there is a layer of connective tissue which must, as a matter of course, be torn off by the current of blood at the spot where the rupture of the vessel occurs. The amount of connective tissue, however, may be so small that it escapes altogether the attention of the microscopist. This occurs more especially when the rupture takes place in the venous bloodvessels of the mucosa of the bladder, as in these instances the veins are in a state of varicose enlargement, a condition which was termed by the older pathologists "hæmorrhoids of the bladder."

I know, for instance, of a case in which urine heavily loaded with blood was sent to a microscopist for examination. He was unable to locate the site of the hæmorrhage, whereas, the surgeon (the late Dr. Carnochan) positively asserted that he could start the hæmorrhage by introducing a sound into the neck of the bladder. Probably this was an instance of dilated veins at the neck of the bladder, rupturing spontaneously or upon the slightest touch with an instrument.

When, however, the shreds of connective tissue are numerous, being found mixed with the sediment at the bottom of the vessel after the voided urine has stood at rest for a period of six or eight hours, a diagnosis as to the source of the hæmorrhage is, in most instances, possible. Such shreds are voided with bloody urine in either of four instances:

1. In ulceration of the mucosa of the genito-urinary tract—mainly the bladder, but sometimes the urethra or the pelves of the kidneys.

2. In a suppurative process after the rupture of an abscess, and in which shreds of the so-called membrana pyogena are readily detached.

3. In cases of tumors, most frequently of the bladder.

4. A rather common cause is the presence in either the bladder or the pelvis of the kidney of a foreign body in the form of a calculus.

The calculi in the pelves are invariably made up of uric acid or oxalate of lime; in the bladder, on the contrary, they may be composed of alkaline phosphatic salts, deposited primarily or around a nucleus, passed from the pelvis through the ureters.

Traumatism may, as a matter of course, be instrumental in rupturing bloodvessels and causing the appearance of sloughs and shreds of connective tissue in the urine. In order to establish a positive diagnosis as to the source of the hæmorrhage, the epithelium, so markedly different in different portions of the genito-urinary tract, will prove of inestimable value to the microscopist. For no one will doubt that in every instance of a rupture of bloodvessels on the mucous surface a certain number of the epithelial cells covering the particular spot of injury will be detached. Such epithelia will be of diagnostic value in cases of traumatism, ulceration, and abscess. But if the hæmorrhage be due to the presence of a tumor, the epithelia detached will prove of comparatively little service, since we know that the tumors themselves are covered with either cuboidal or columnar epithelium, which varies greatly both in size and shape, and will not enable us to determine the location of the tumor. Quite recently I examined the urine of a woman thirty-eight years of age, which was loaded with blood. The patient was subject to repeated attacks of hæmaturia with intervals extending to days or even weeks, in which the urine was free from blood. Under the microscope I found, in addition to pus and red blood-corpuscles, numerous epithelia of the kidneys, a few epithelia from the pelves of the kidneys, and a few resembling those of the middle layers of the bladder. My conclusion was that the organ exhibiting its epithelia most lavishly must be the site of the hæmorrhage. Therefore, my diagnosis was:

[1] Read before the Brooklyn Medical Microscopical Society, January 8, 1890.

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"Hæmorrhage from the kidneys due to pyelo-nephritis," the more positive, as I encountered a certain number of granular casts.

The clinical examination of this case disproved my diagnosis. I found in the mucosa of the urethra a papillomatous growth, freely supplied with blood-vessels, the so-called caruncle, which bled furiously upon being touched with the catheter. The latter, upon being introduced into the bladder, yielded urine free from blood, but with all the characteristic features of pyelo-nephritis. It is obvious that in this case the complication of caruncle of the urethra led to an erroneous diagnosis, once more proving the fact that microscopical examination is a mere aid in diagnosis, and becomes valuable only by being combined with clinical examination.

Tumors of the bladder are of rare occurrence and usually give rise to temporary hæmorrhage, owing to the unstable or fluctuating condition of the walls of the bladder, due to the alternate expansion and contraction of that organ. Such hæmorrhages are, as rule, the first symptoms to draw the attention of the patient and the physician to a morbid condition of the bladder. I have recently had the opportunity of examining three specimens of tumors of the bladder, all of a villous type, and, therefore, will confine myself to the description of these three villous tumors, adding a report of a certain number of instances, in which the diagnosis of a villous tumor of the bladder was made by the examination of the urine only, without corroboration by surgical interference or post-mortem examination. (These researches I have conducted in the laboratory of Dr. Heitzman, in New York.)

To-day it is an acknowledged fact that but two types of villous tumor occur in the walls of the bladder, taking their origin from the mucous tissue of this organ. The benign type of villous tumor is termed *papilloma*, the malignant papillomatous or villous carcinoma. It is, indeed, a strange fact that this distinction, being of such vital importance, both to the pathologist and the patient, has been acknowledged only within the last fifteen years. Previous to this time every villous tumor of the bladder, without exception, was termed villous cancer.

C. Rokitansky speaks only of villous cancer of the bladder, admitting, at the same time, that it is a comparatively harmless affair, causing hæmorrhage, but scarcely ever producing infiltration in neighboring, or secondary tumors in distant, organs.

Kocher, of Berne, Switzerland, seems to be the first, in 1876, who described the form of tumor termed benign papilloma of the bladder. He was followed by Winckel, of Munich, in 1877, and by Alexander W. Stein, of New York, in 1881.

Lücke, of Berne, in 1869, made the following statement:[1]

"Papilloma of the bladder, or what is ordinarily designated cancer of the bladder, deserves special mention. This disease of the mucosa of the bladder consists in a villous proliferation of the submucous tissue which sends out long ramifying villosities, covered with a regular epithelium."

Although in this by no means rare variety of tumor of the bladder, secondary cancerous formations have not been observed, it was placed among the cancers mainly on account of its deleterious course. The diagnosis during life is easy when large villosities are voided with the urine, but a distinction between this form and the true carcinoma of the bladder is scarcely possible, since to both the uncontrollable hæmorrhages, the ulceration of the vesical mucosa, and the secondary diseases of the kidneys are common, as to all tumors of the bladder. Lücke says that polypous tumors of both the bladder and the urethra may exhibit a papillomatous growth, sometimes with considerable enlargement of the bloodvessels. His figure, copied from Demme, is intended to illustrate a papilloma, but in reality it exhibits plainly nests of epithelia in the connective tissue stroma, and, therefore, is a carcinoma.

Ultzmann and Hoffmann[2] give illustrations of what they call villous cancer, both with high and low powers of the microscope. Their drawings, however, correspond to an entirely benign papilloma, without any of the structural features that belong to cancer.

In 1887, Bizzozero[3] gave illustrations of a shred of connective tissue, and of flat epithelia, both single and in clusters, which no conscientious microscopist will dare to attribute to cancer.

Alexander Peyer[4] gives copies of plates both apparently from Bizzozero's and Ultzmann's illustrations, which he likewise considers diagnostic of villous cancer of the bladder.

The only author who has ever done justice to this topic is Alexander W. Stein. In his excellent treatise,[5] he sharply discriminates between benign papilloma and malignant cancer of the bladder. Plate I. of his book is a copy after R. S. Hudson,[6] exhibiting eight pedunculated papillomatous growths arising from the mucosa of the bladder. Some are as large as filbert-nuts.

[1] Die Lehre von den Geschwülsten in anatomischer und klinischer Bezielung. Handbuch der Allgeimenen und Speciellen Chirurgie. Von Pitha and Billroth.

[2] Atlas der Physiologischen unt Pathologischen Harnesdimente. Von Ultzmann and Hoffmann. Wien, 1872. Plates 41 and 42.

[3] Handbuch der Klinischen Mikroskopie, von Dr. Giulio Bizzozero. Second edition, translated by Dr. Stefan Bernheimer. Erlangen, 1887. P. 290.

[4] Atlas der Mikroskopie am Krankenbette, von Alex. Peyer. Stuttgart, 1887. Plate 40.

[5] A Study of the Tumors of the Bladder. New York, 1881.

[6] Polypi of the Bladder. Dublin Medical Journal, June, 1879.

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In Plate II. he gives microscopical sections with both low and high powers. The explanation accompanying the figures drawn with high power, is especially remarkable for its clearness.

Hudson says:

"The thin-walled capillary vessels of irregular diameter may be seen coursing through the growth, the whole surface being covered with columnar or polygonal epithelium. The epithelium is, however, on the surface, *homologous*, not within the subjacent connective tissue, *heterologous*, which is characteristic of epitheliomatous growths."

Sir Henry Thompson, in a lecture[1] on "Tumors of the Bladder," states that:

"Until recently, most vesical tumors were supposed to belong to that class of growths roughly indicated as 'cancerous.' And, besides these, a single species was familiarly recognized under the term villous, although by some this was also relegated to the preceding class, as 'villous cancer,' without any warrant, however, for doing so. It was well known to be a bleeding tumor, which sooner or later produced a fatal result by its single irrepressible function of continuous bloodletting. This so-called 'villous growth' is, in fact, of all varieties, that which most commonly affects the bladder, under the name of papilloma."

In his classification he describes the following forms of tumors of the bladder: 1, mucous polypus; 2, papilloma; 3, fibrous papilloma; 4, myoma; 5, epithelioma; 6, scirrhus.

"The rarest of all is the dermoid tumor, which has been, on two or more occasions, met with in the bladder."

He also describes a class of tumors which "appears to be best indicated by using the term 'transitional' to describe it, as, perhaps occupying a place between papilloma and a formation of malignant type, sarcoma."

Mr. Gilbert Barling,[2] in a paper on "The Surgery of Tumors of the Bladder," in speaking of the classification of tumors, says:

"Hitherto there has been the greatest confusion, and nearly everything has been termed villous or cancerous, without any definite meaning being attached to either word. To many surgeons it will, I believe, be a surprise to learn that a very considerable number of these tumors are innocent. Examination of the records of nearly 300 cases show that about half of them were innocent tumors, the exact condition of nearly all being verified by microscopical examination."

"Amongst the innocent tumors papilloma is by far the most common, as it more than outnumbers all the rest put together. Of the malignant tumors two-thirds are carcinomas, and the remainder sarcomas, but it is a singular fact that until the last few years the existence of sarcoma of the bladder was ignored or denied.

"Carcinoma of the bladder is commonly of the squamous variety or epithelioma, but the alveolar growth does occur, and may be termed clinically either encephaloid or scirrhus."

He defines the term "villous" as merely descriptive, and not applied to a definite species.

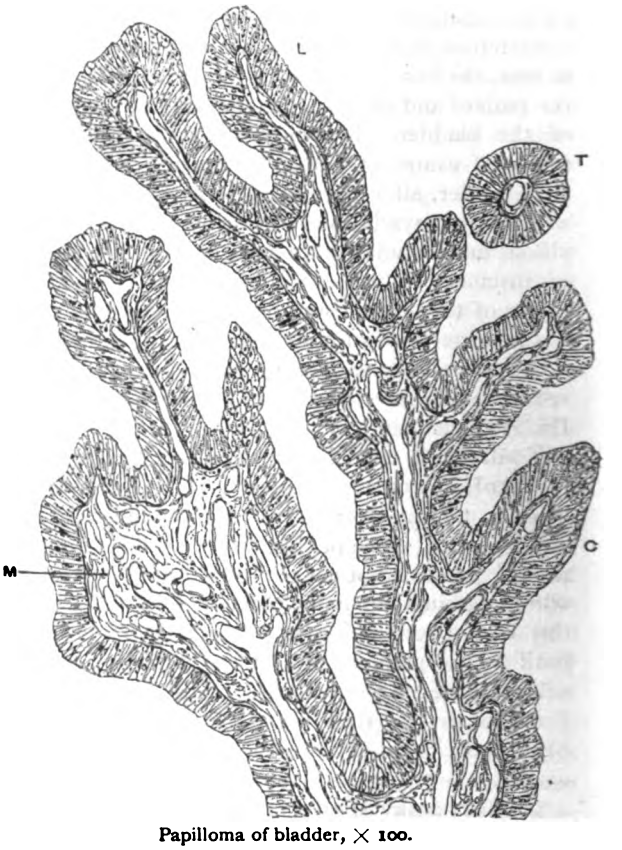
[1] British Medical Journal, January 7, 1888.

[2] Birmingham Medical Review, May, 1888.

In the *British Medical Journal* for July, 1888, Mr. Barling described a case in which he removed a scirrhous carcinoma from the bladder of a man sixty years of age.[1]

The tumor which furnished the specimens for my own research appeared to be about the size of a child's fist. It was removed by supra-pubic cystotomy from the posterior surface of the bladder of a man forty-five years of age, the patient dying, several days after the operation, from septic peritonitis. The tumor was attached to the submucous tissue by means of a broad pedicle, and exhibited all over the surface a marked cauliflower-like appearance. After hardening in chromic acid, a portion was embedded in celloidin and cut in different directions. Low powers of the microscope sufficed to establish a diagnosis of papilloma (Fig. 1).

FIG. 1.



Papilloma of bladder, × 100.

L, longitudinal section of villi.
T, transverse section of villus.
C, columnar epithelium.
M, myxo-fibrous connective tissue, freely supplied with bloodvessels.

There are innumerable branching villosities, made up of a delicate myxo-fibrous tissue, running in

[1] I regret that I have been unable to obtain access to Mr. E. Hurry Fenwick's essay on the "Pathology of Tumors of the Bladder."

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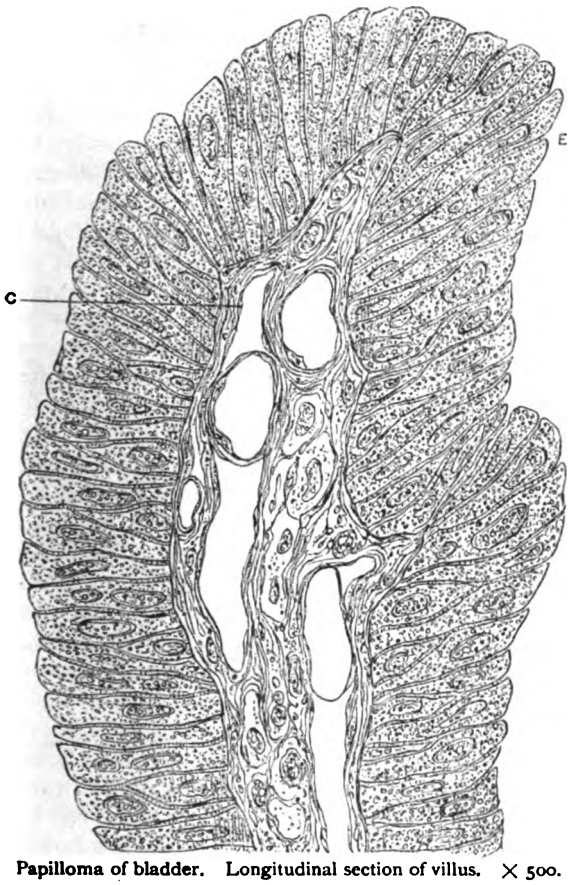
different directions, so that in one and the same specimen we observe longitudinal, transverse, and oblique sections of villi. This connective tissue is supplied with a large number of bloodvessels, mainly capillaries, but also many venous vessels were found, especially in the broad pedicle of the tumor. Toward the summits of the villi these vessels formed loops, often visible only in transverse sections.

The connective tissue is covered by a so-called stratified columnar epithelium of rather exceptional breadth. Most of the papillomata that have thus far been described, had a coating of cuboidal or short columnar epithelium arranged in a single layer.

Higher powers of the microscope give an insight into the minutiæ of the tumor (Fig. 2).

FIG. 2.



Papilloma of bladder. Longitudinal section of villus. × 500.
C, myxo-fibrous connective tissue with numerous and wide capillary bloodvessels
E, stratified columnar epithelium.

The connective tissue is neither purely myxomatous nor purely fibrous, but a combination of both, known as "myxo-fibrous." The network of this tissue is made up of delicate bundles of fibrous connective tissue, in the meshes of which we see protoplasmic bodies varying in size and shape, but nowhere very numerous.

The capillary bloodvessels are conspicuous by a pronounced adventitial wall of fibrous connective tissue, such as we often meet with in myxomatous or myxo-fibrous tissue, more especially of tumors. The endothelial coat of the vessels is marked by large nucleated endothelia, a rather common feature in newly formed bloodvessels generally. At the periphery of the connective-tissue formation there is a faintly marked layer, the "structureless or basement membrane." The covering epithelia are columnar of a rather unusual length, and stratified by the interposition of nucleated wedges between the points of approximation of the epithelia. The nuclei are vesicular, and, corresponding with the protoplasm around the nuclei, are finely granular. The cement substance between the epithelia is extremely narrow, and traversed by rather indistinct thorns.

All papillomatous growths of the bladder give rise to repeated, sometimes even dangerous hæmorrhages. The reason for this is obvious, when we consider the alternate contraction and expansions of the walls of the bladder, as well as to the currents and whirlpools created in the urine in its expulsion from the bladder.

We can easily realize that delicate shreds of the villosities may be torn off, either with their covering epithelium *in situ*, or detached. The epithelia alone cannot have a great diagnostic value, since they vary so much both in size and shape. The connective-tissue shreds, on the contrary, if voided with the urine in large quantities, are of positive diagnostic value, owing to their ramifying or cauliflower-like configuration, and their richness in bloodvessels, which are either filled with blood corpuscles or empty.

I wish to draw attention particularly to two cases in which hæmaturia was present, together with numerous branching shreds of connective tissue, rendering the diagnosis of papilloma highly probable. In neither of these cases was a post-mortem examination obtained, and for this reason the diagnosis did not go beyond the probability of the presence of papilloma of the bladder.

One of these cases was that of a man, of about fifty years of age, who, after many years of ailment from hæmaturia, died from exhaustion. In this case the villi were characterized by coils at their ends, somewhat resembling the tufts in the cortical substance of the kidney. Such tufts are not infrequently seen in papillomata of other organs. Possibly, however, they may be attributed to the coiling of the apices of the villi, caused by the whirl in the escaping urine (Fig. 3).

The detached epithelium in this case was cuboidal, somewhat resembling that of the pelvis of the kid-

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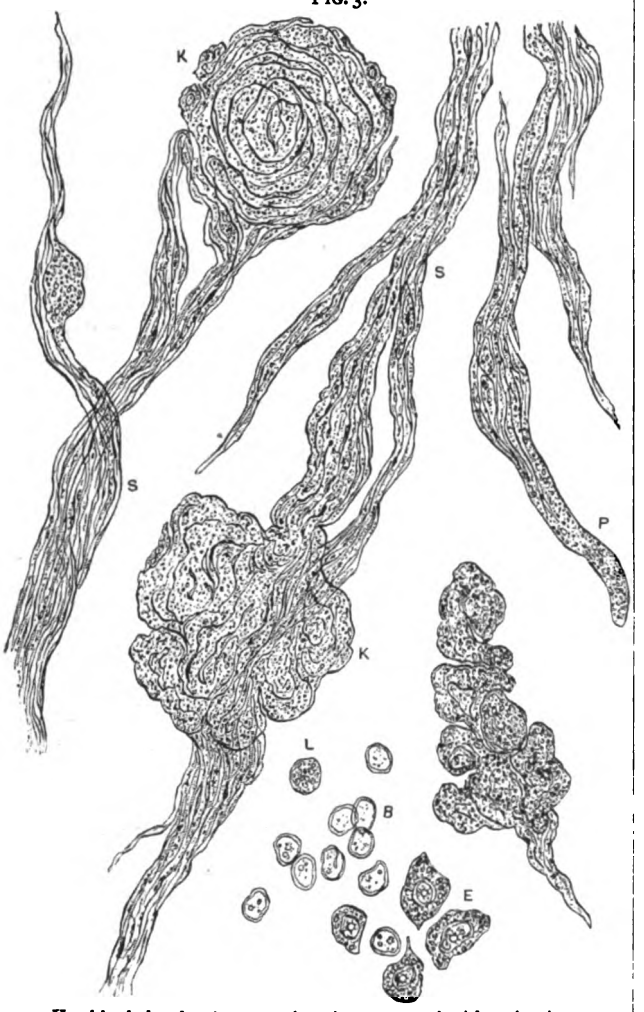
ney, and, therefore, of no diagnostic value whatever.

The second case was that of a man, aged thirty years, who by previously repeated hæmorrhages was

FIG. 3.



Knobbed shreds of connective tissue, passed with urine in a case of papilloma of bladder. × 500.

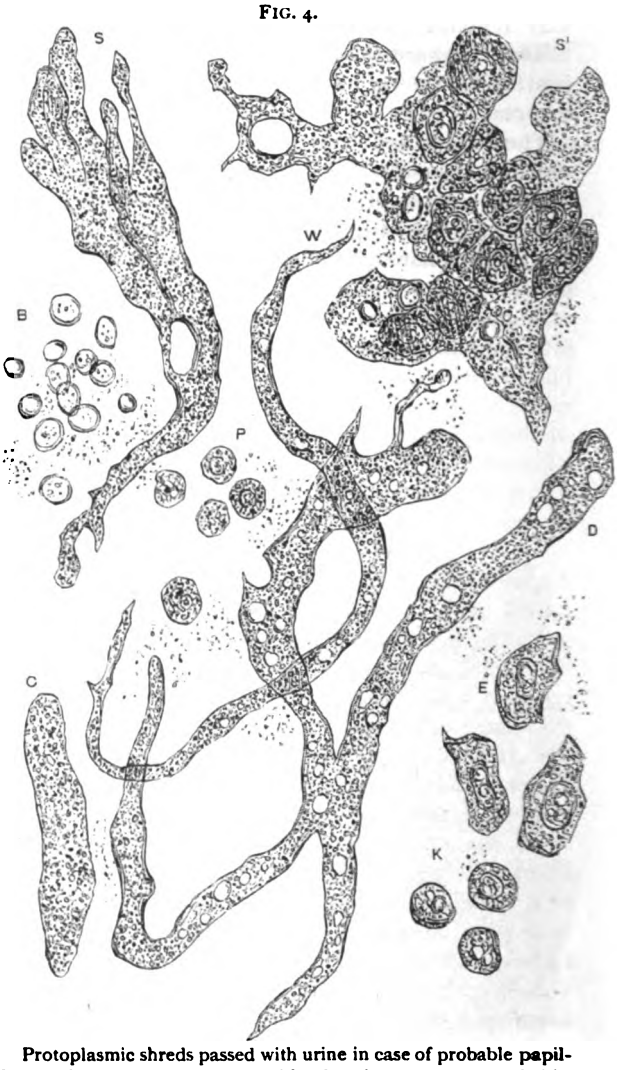
K, K, knobs and tufts, caused by a coiling of capillaries.
S, S, striated and fibrous shreds of connective tissue.
P, protoplasmic shred.
B, red blood-corpuscles.
L, leucocyte.
E, covering epithelium of papilloma.

much exhausted. The shreds voided in this instance were not striated or fibrous, but either single worm-like granular masses, or masses of remarkable shapes, with many ramifications.

All these peculiar formations exhibited the structure of protoplasm, lacking basis substance. In various portions were seen numerous, small vacuoles, possibly the spaces, in which fat globules had been imbedded. (See Fig. 4.)

In this second case, some of the shreds so closely resembled the filaria sanguinis hominis that, at first sight, the possibility occurred to me that we had to deal with hæmaturia from such a parasite. But the ramification of these shreds, and the distinct fibrous structure of some of them, rendered the presence of

FIG. 4.



Protoplasmic shreds passed with urine in case of probable papilloma of bladder, combined with chronic croupous nephritis. × 500.

S, branching protoplasmic shreds.
S', branching protoplasmic shred, studded with cuboidal epithelium.
W, worm like shred.
D, double protoplasmic shred.
B, red blood-corpuscles and hæmatoblasts.
P, pus corpuscle.
K, kidney epithelia.
C, granular cast.
E, covering epithelium of tumor.

a papilloma of the bladder more probable. The urine showed in addition numerous red blood-corpuscles in all stages of development, also a number of pus corpuscles, kidney epithelia, and granular casts, which features proved the presence of croupous or parenchymatous nephritis, as a complicating

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disease, probably dependent upon the presence of a tumor of the bladder. Unfortunately nothing could be learned in regard to the fate of the patient.

I know of an instance in which beautiful ramifying connective-tissue shreds were found in the urine, together with a large amount of blood.

The diagnosis was obviously papilloma of the bladder. The hæmaturia ceased shortly after, and the patient died in about eight months of an intercurrent disease. At the post-mortem examination the mucosa of the bladder was found smooth and free from any tumor. This, of course, does not prove that the diagnosis was incorrect, but rather that a small papilloma attached by a slender pedicle, may have been completely torn away with the result of a complete cure.

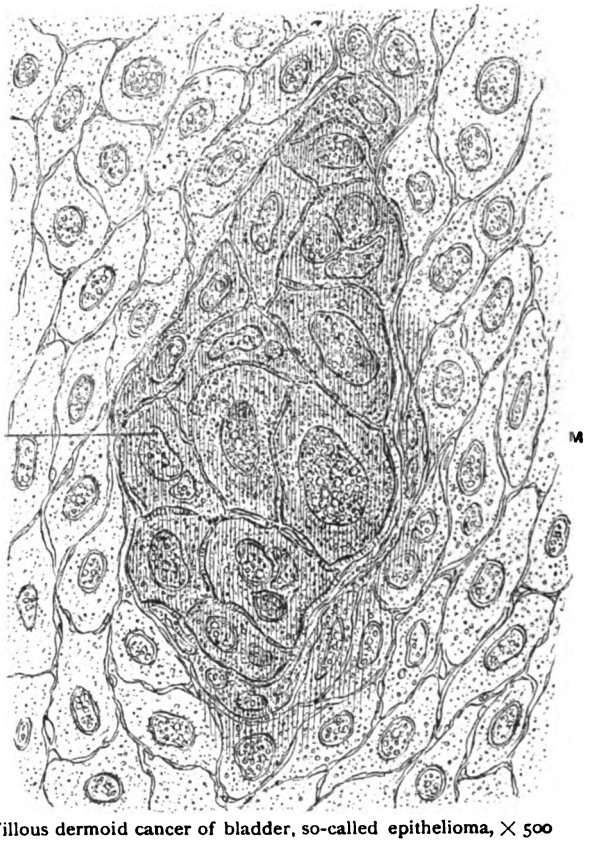
The second typical form of villous tumor of the bladder is the villous cancer. Alexander W. Stein, in his above-quoted study on tumors of the bladder, distinguishes four varieties of carcinomata, viz., epithelioma, encephaloid, villous cancer, and scirrhus, which, as he believes, are enumerated in the order of their frequency.

From my studies, I must take exception to the nomenclature of Dr. Stein. Villous cancer is not a distinct species, but merely a sub-variety of either epithelioma or medullary cancer, which latter form Dr. Stein designates by the rather obsolete name of encephaloid. Whether or not scirrhus ever assumes the shape of a villous tumor I am unable to say, since I have had no such case under personal observation. But I am positive that both epithelioma and medullary cancer may, under certain conditions, assume a villous appearance on their surface. In other words, a villous cancer is either an epithelial or a medullary cancer exhibiting the peculiar cauliflower-like appearance so characteristic of papillary tumors in general. It is quite possible that such villous carcinomata start originally in the form of harmless papillomata, gradually assuming the characteristics of cancer, as has been suggested by Kocher (loc. cit.). Obviously the mode of growth and the loop-like arrangement of the capillaries at the periphery determine the villous character of the tumor, which as such is by no means essential to the pathology and clinical course taken by the growths.

I have seen and studied cancer shreds which were voided with the urine in two cases. One was that of a woman sixty-two years of age, the other was that of a man fifty-six years old. In the first case microscopic examination proved the shreds to have sprung from an epithelioma; in the second case they came from a so-called medullary cancer of the bladder.

The shreds in the first case varied in size from the smallest branching or tree-like masses just discernible with the naked eye up to lumps half an inch long and one-quarter of an inch in diameter. The thinnest shreds being placed under the microscope, exhibited a number of detached epithelia of both the flat and cuboidal varieties. The main mass was made up of a delicate myxomatous or myxo-fibrous tissue, in which there were embedded numerous nests of flat, so-called dermoid epithelial cells disposed in the form of pegs and rows. The concentric arrangement of the epithelium was marked in but a few places. Higher powers of the microscope revealed the characteristic epithelial structure of the pegs, the epithelium being supplied with one or several coarsely granular nuclei, evidently in an active process of so-called indirect division. The epithelial pegs and rows were surrounded by a rather regular myxomatous tissue (see Fig. 5).

FIG. 5.



Villous dermoid cancer of bladder, so-called epithelioma, × 500
E, epithelial nest.
M, myxomatous connective tissue.

At the borders of the pegs the transitional forms could frequently be seen, indicative of a transition of connective into epithelial tissue. This transition was established either by a coarse granulation of both the protoplasmic bodies and the basis substance of the myxomatous tissue, leading to a transmutation into epithelium, or so-called myeloplaxes, multinuclear protoplasmic bodies of considerable size were

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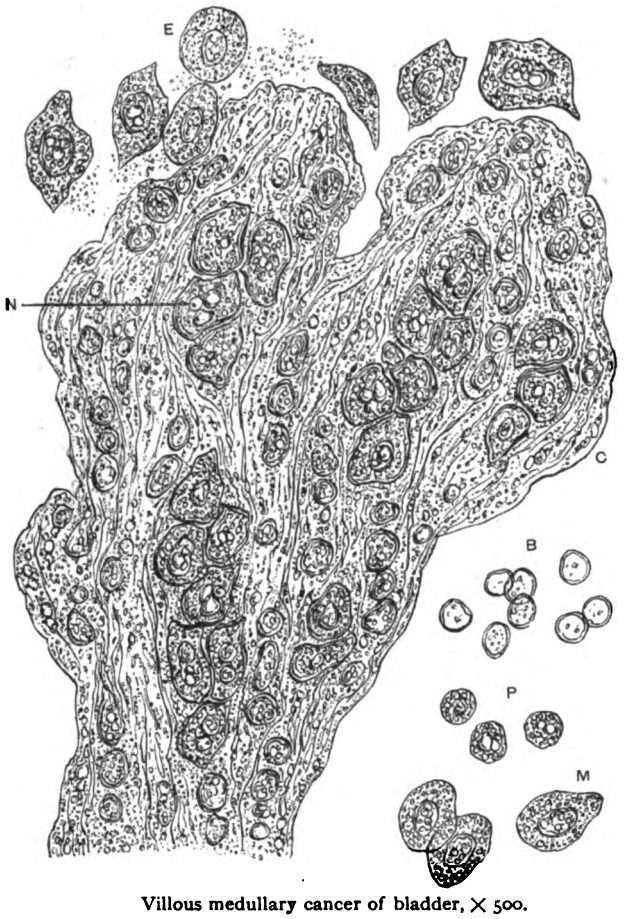
seen, which, by the appearance of new cement substance, seemed to furnish the material for future epithelial pegs. Dr. A. W. Johnstone,[1] of Kentucky, has described this mode of formation, as the rule, in the transition of lymph tissue into secondary cancer.

My second case was a medullary cancer, showing cauliflower-like or pointed excrescences upon the numerous though small shreds voided with the bloody urine (see Fig. 6).

FIG. 6.



Villous medullary cancer of bladder, × 500.

N, epithelial cancer nest.

C, connective tissue reduced to protoplasm and crowded with so-called inflammatory corpuscles.

B, red blood-corpuscles.

E, covering epithelium of tumor.

M, epithelium from either the middle layers of the bladder or from the surface of the tumor.

In this instance the connective tissue was devoid of myxomatous or fibrous structure, but was for the most part transformed into an uniformly granulated protoplasmic mass, holding a large number of so-called inflammatory corpuscles and numerous irregular epithelia, mostly arranged in small nests. This type of cancer is justly considered the most malignant of all. Unfortunately I am unable to give clinical details as to the subsequent history of either of these patients.

Villous cancer of the bladder has in times gone by always been considered rather mildly malignant, being instrumental in producing hæmorrhages, but not causing an infiltration of the contiguous tissues or secondary formations in distant organs. This view can no longer be maintained, since we know that there are two varieties of villous tumors, the benign papilloma and the malignant carcinoma. Papillomata may undoubtedly remain harmless so far as their pathology is concerned, though they may destroy life rather slowly by repeated hæmorrhages. Cancer, on the other hand, impairs the constitution by the loss of blood, as well as local growth and infiltration of the adjacent tissues. Further researches of tumors, positively diagnosed to be cancerous, will be required, in order to settle the question, whether primary cancers of the bladder do not cause the growth of secondary tumors in distant organs, as has been maintained by the older pathologists.

To-day, since electric cystoscopy has attained such a marvellous degree of perfection, the clinical diagnosis is much facilitated after the microscope has drawn attention to the presence of a villous tumor in the mucosa of the bladder. By this means the site, size, and configuration of the tumor may be readily determined in the living patient. The chances of successfully removing such a tumor by anterior cystotomy are likewise much more favorable than they were some twenty years ago, when antiseptic surgery was unknown to the operating surgeon.

[1] Microscopical Morphology, by C. Heitzman, 1888.

ELECTRICITY IN A CASE OF FÆCAL IMPACTION.

With Notes on Solvents for Fæces.

BY GUY HINSDALE, M.D.,

ASSISTANT PHYSICIAN TO THE PRESBYTERIAN HOSPITAL, AND TO THE ORTHOPÆDIC HOSPITAL AND INFIRMARY FOR NERVOUS DISEASES.

IN a case of constipation with periodic impaction that about eighteen months ago came under Dr. Weir Mitchell's care, such gratifying results were obtained that the following account of it may be of use to the profession:

The subject, a lady, about fifty years of age, for nearly fifteen years had been greatly annoyed by impactions of fæces. No very alarming symptoms had ever been brought on, and it was found that the hardened lumps would come away if the patient remained in bed several days. Many of these lumps showed evidences of having been weeks, and even months, in the intestine.

There seemed to be a particular place where these masses became lodged, side-tracked, as it were, for upon their final passage they could be readily distinguished from the accompanying excretion, the latter being comparatively soft.

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A physician who had been previously consulted at one time introduced his hand and a portion of his forearm into the bowel, but did not discover any stricture. Dr. Mitchell considered the difficulty to be due to atony of the muscular coat of the intestine, and advised the use of electricity locally applied, and massage of the abdomen and of the body generally. In addition, the patient was to take a laxative pill and a tablespoonful of glycerin internally three times a day.

I had a special form of electrode made, consisting of a polished steel bougie two inches long and five-eighths of an inch in diameter, with blunt convex extremities. This was screwed to a flexible copper rod which was plated and insulated, and provided with a screw for attachment to a handle. This made an instrument sixteen or seventeen inches long.

About eighty applications of the faradic current were made, in which the instrument was usually introduced sixteen inches. As a rule, no great difficulty attended its passage, although it was not easy to pass the flexure of the rectum, especially if the fæces had collected, and it was generally possible to tell when the bulb passed by these lumps, which were lodged usually eight or nine inches from the anus.

Not the slightest injury was done to the intestine by the passage of the instrument. Sometimes flatus was forced backward along the bowel, causing momentary distress like colic, but otherwise no pain was experienced. A broad electrode, six by five inches, was applied at different places over the abdomen, and a moderately strong faradic current used for about half an hour daily. The internal electrode was withdrawn gradually, so as to influence directly the entire calibre of the bowel within its reach.

Injections of glycerin were tried without giving a satisfactory result; only mucus came away. Laxatives were abandoned later in the treatment of the case, and strychnine internally and hypodermically was resorted to, together with belladonna. Both Dr. Mitchell and the patient, however, were confident that the greatest improvement was made by the electricity, and at the end of treatment she found herself able to go about with freedom, without the least inconvenience from impactions, and is now in a better state of general health than for many years.

At Dr. Mitchell's suggestion, I made some experiments with the scybala passed from the bowel that I think are worth recording. Some of the smaller lumps of fæces about ¾ inch by ½ inch, selected as nearly alike as possible and in a state as when passed from the bowel, were put into several different fluids, to test the readiness with which they might soften, viz.:

I. Pure water. At the end of one week showed softening of the fæcal mass and discoloration of the water, the lump being at the bottom of the glass. In two weeks it was broken down and the water much discolored.

II. Pure glycerin. In one week no discoloration; the lump floated. In four weeks no perceptible change, excepting very faint discoloration of the fluid.

III. Aromatic sulphuric acid ʒj, water ʒvij. In one week considerable softening, great discoloration; lump sank; offensive. In two weeks great discoloration and softening.

IV. Cod-liver oil. In three weeks little, if any, change. In ten months no change beyond slight hardening of the mass and diffusion of the coloring matter.

The following experiments were made with a large egg-shaped mass, which was squared so that its surfaces were perfectly fresh. It was then cut into sections each about ¾ inch by ½ inch by ½ inch.

V. Pure water. On the first day the mass was at the bottom of the glass, and some tendency to discoloration and softening was noted. The softening was greater in one week. In two weeks it was crumbling, and fell to pieces on being disturbed.

VI. Lime water. In one day more softening and discoloration than in V. In one week it was quite soft, and in two weeks it crumbled, and on shaking was thoroughly disintegrated. This solution seemed to have the greatest softening action.

VII. Glycerin. In two weeks the lump seemed hardened. The color was diffused through the glycerin.

VIII. Tartaric acid, gr. v; water, ʒj. In the first day discoloration of the solution was noted. In two weeks the lump was still intact.

IX. Tartaric acid, gr. x; water, ʒj. In one day this showed the most discoloration of any of the fluids. No softening in two weeks; its shape was intact, but it could be disintegrated by pressure.

X. Glauber's salt, gr. xx, to fʒj of water. In one week the color was diffused and softening had commenced. After eighteen days the mass still retained its shape.

XI. Glauber's salt gr. xl to fʒj of water. Result the same as in X.

XII. Rochelle salt gr. xx to fʒj of water. In one week more softening than in X. and XI. In eighteen days well disintegrated.

XIII. Rochelle salt gr. xl to fʒj of water. Still more softening than in XII., and thoroughly disintegrated in eighteen days.

XIV. Soap solution gr. xx to fʒj of water. Not so much disintegration as in XII. and XIII.

XV. Soap solution gr. xx to fʒij of water. About the same result as in XIV.

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The conclusion from these trials would seem to indicate that an alkaline solution, like lime water, or solutions of Rochelle salt, would be most likely to soften scybala; that oils and glycerin harden them, and that a weak acid solution chiefly affects the coloring matter.

ABSCESS OF THE CORNEA.

BY H. F. HANSELL, M.D.,
OF PHILADELPHIA.

THE symptomatology and pathology of abscess of the cornea may be found in every text-book on diseases of the eye, are well known and accepted, and a review of them in this paper may with propriety be omitted. Differences of opinion among eminent practitioners exist, however, in relation to the therapeutics, and may well invite further discussion.

The results of some clinical investigations pursued by me during the past year have shown:

First. That eserine is superior to atropine.

Second. That cocaine is a symptomatic remedy only, and, when long continued, is injurious.

Third. That the Saemisch operation is, in most cases, inferior to a simple division of the abscess.

To de Wecker should be ascribed the merit of repeatedly bringing eserine to the notice of the profession, and of urging its use in corneal affections. His followers have been few, and eserine has not attained that place in ocular therapeutics to which it is entitled. I have frequently prescribed it in abscess and deep ulcer, and have never regretted it. On the contrary, I am convinced that eyes have been saved, which under mydriatics would have been lost. The case described below, which is one of many, is a fair illustration, as eserine was used after other remedies had failed.

Two objections are urged against this drug: First, that the danger to vision, on account of the small pupil produced, is increased. This objection is just, and should be considered. Care must be taken that the contraction of the iris and ciliary muscles does as little damage as possible. To guard against permanent closure of the pupil and constant spasm of accommodation, instillations of eserine should be alternated with instillations of atropine, or the former may be used by day and the latter by night. These two remedies are therapeutically compatible, and, when employed in the same case with a full understanding of their effects, they give the best results. If, however, the abscess threatens to destroy the vision, the possible danger from posterior synechiæ and pupillary membrane should be risked. It is then a choice between two evils.

The second objection is that headache follows the use of eserine. This is invariably observed, yet, in my experience, it has not proven a real obstacle. When eserine is recognized as the cause and explained to the patient, the importance of the headache vanishes. The pain is not intense, and subsides in from one to two hours, and when, exceptionally, it interferes materially with the patient's well-being, the strength of the solution may be decreased. Stronger solutions than two grains to the fluid-ounce are not advisable.

The writer protests against the common practice of prescribing cocaine in abscess and other severe corneal affections. As a remedy, cocaine has no place in the therapeutics of the cornea. It is deservedly held in high esteem as an anæsthetic for the surface of the eye, and as an aid to atropine and other mydriatics in dilating the pupil. It is a well-known fact that it destroys the anterior epithelial surface of the cornea, and this occurs when used in weak as well as strong solutions. If applied but a few times, the epithelium is afterward restored, and the eye suffers no damage. If, however, the applications are frequently repeated, superficial ulcers and opacities result. The momentary relief from photophobia or pain cannot be advanced as a sufficient reason for its use in face of the undeniable fact that this very relief is obtained at the expense of the membrane already diseased. It needs no argument to prove how pernicious this action must be in those diseases which are caused by loss of epithelium and destruction of underlying tissue.

Operative interference should, in the opinion of the writer, be limited to a division of the anterior surface of the abscess and evacuation of the pus. The Saemisch incision is strongly advocated and practised by leading ophthalmic surgeons. This operation, however, has a serious disadvantage in that the anterior chamber is opened, the aqueous escapes, and anterior synechiæ or dislocation of the lens result as a direct consequence. It is advisable, and ought to be performed in those cases only in which perforation must occur or has occurred, and when the consequences of the operation are to be preferred to the greater evils of spontaneous or uncontrolled perforation.

The supplementary treatment may be dismissed with the briefest mention. In the formative stage: leeches, blisters, antiseptics, hot-water bathing, pressure bandages, laxatives, supporting measures, and liberal diet are required. In the convalescent stage: astringents to the lids, and cauterization of the ulcer with electricity or strong solutions of nitrate of silver.

Mrs. S., æt. thirty, an emaciated, delicate woman, completely exhausted from nursing a fifteen months' old baby. This exhaustion was in all probability the cause of the disease. She was too weak to leave her room, and so discouraged that she feared each day would be her last. The abscess was situated on the lower inner quadrant of the cornea, measured about four millimetres in diameter, and involved all

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the layers of the cornea except the deepest. The epithelial surface was elevated by the pus. Hypopyon and unguis, neighboring cornea clear; iris dilated, but not adherent. The patient had been under treatment at a dispensary for two weeks before my first visit, and was using a solution of cocaine, atropine, and boracic acid locally, and iron and quinine internally. She had but little pain, and no photophobia. Vision for large objects only.

The abscess was opened and scraped on two successive days, the knife passing through diseased tissue only. Instillations of eserine every three hours by day, and atropine twice during the night; washing with Panas's fluid and frequent hot-water bathing were ordered. The baby was weaned, and the patient given twelve grains of quinine daily with milk punches and nourishing diet. In three weeks all inflammatory symptoms had subsided, leaving a thick white cicatrix three millimetres in diameter without adhesions of the iris.

The cure in this case might be attributed to the operations, and the drugs given a second place, but practically this claim would not hold. The abscess at the time of the incision could hardly be regarded as a collection of pus with well-defined boundaries. The surface was already elevated, softened, and non-resisting, and the pus had found its way into the lowest section of the cornea. Under the influence of the eserine, it must either have been absorbed, as part of it undoubtedly was, or driven to the surface by pressure against each other of the layers of the cornea excited by the eserine.

A CASE OF TREPHINING FOR TRAUMATIC EPILEPSY.

BY KNUT HOEGH, M.D.,
OF MINNEAPOLIS.

H. D., thirty-one years old, born in Norway, farm laborer, first seen November 4, 1889. He gave the following history, which was confirmed by his three brothers who accompanied him. When about two years old was shot by accident with slugs, producing numerous wounds of face and neck, and one of the forehead over the left eye. Profuse hæmorrhage and severe convulsions immediately followed. The child recovered, the frontal wound suppurating for about six months. After this he enjoyed good health until he was between sixteen and eighteen years old, when he had several epileptic attacks, the first coming on when he was in bed asleep in the early morning. His first attack was followed by an acute illness of two weeks' duration, and of unknown nature. He was again well and free from epileptic seizures for several years, when they returned with longer or shorter intervals. They would come in a series of two or three seizures within twenty-four hours, sometimes by day, at other times by night, and then there would be weeks or months of immunity. When about twenty-three years old, he shot himself in the leg while hunting in the mountains and nearly perished from hæmorrhage. After this accident a condition of melancholia developed; he lost interest in his work, became morose, had delusions of persecution, etc., for which he was sent to an insane asylum. He was discharged in about five months and was perfectly well with the exception of one single epileptic fit. He emigrated to America when about twenty-nine years of age, and earned a living as farm laborer and woodsman, being a steady worker, only rarely and moderately indulging in alcoholic stimulants. But soon after his arrival here he became again subject to fits, which made their appearance with increasing frequency, so that lately he has had three or four every month. Simultaneously with the advent of the epileptic attacks he became subject to a constant headache, which to him seems to start from the left side of the forehead.

Upon examination of the quite strongly built patient, there are seen several scars on face and neck, and one quite large, somewhat depressed and irregular cicatrix one and one-half inches above the left supraorbital margin, nearly two inches to left of the mesial line. It seems to be attached to the frontal bone, is white and tender on pressure; no convulsions are elicited by irritating the scar. Careful examination fails to detect any lesion of internal viscera; urine contains no albumin; pulse 72. Patient has a stolid expression of face, answers questions slowly and with a certain hesitation; there is a marked contrast between him and his bright and intelligent brothers, one of whom has observed him during several attacks and states that they are ushered in by a cry, that they are accompanied by twistings of the body, biting of tongue, and foaming at mouth, but that they do not begin in any particular group of muscles. A maternal uncle and aunt are said to have been insane.

A very excellent physician who had seen the patient formerly had given him medical treatment without benefit, and had advised an operation.

The patient was admitted to St. Barnabas's Hospital, November 6th, and after a full bath, the anterior part of the scalp was shaved and covered by sublimate dressings. The operation was performed the next day in the presence and with the advice of Drs. Burnside Foster, W. A. Jones, the house surgeon Dr. E. Wood, and P. A. Aurues, medical student. A hypodermic injection of ¼ grain of morphine was given and chloroform was administered, while the scalp was washed with oil of turpentine, alcohol, and a 1 : 1000 sublimate solution in acidulated water. The surrounding parts were covered by towels wrung from corrosive sublimate solution; the operator's and assistants' hands had been carefully disinfected; instruments had been sterilized by boiling for twenty minutes; sponges, cloths, dressings, and operating gowns by steam of 212° F. for half an hour, needles and silk by one hour's boiling. A horseshoe-shaped flap with its base outward embraced the scar and surrounding tissue, and was carried down to the periosteum. After the flap had been reflected outward, it was seen that the external scar did not correspond to the scar in the bone, which had to be exposed by an incision running horizontally inward for two inches. The scar in the bone was vascular, rough, and somewhat

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depressed. A one inch trephine was applied and easily cut through the unusually thin bone. On the inside of the bone disk was found firmly fixed an irregular piece of lead, the size of a small pea, and several smaller grains of lead. The dura mater was adherent around the disk, somewhat thickened and slightly adherent to the underlying brain, which seemed rather reddish. The longitudinal sinus was not encroached upon, but the falx cerebri was seen dipping down between the hemispheres. The dura was laid open by a cross-cut, which produced some hæmorrhage, a few strands of disinfected horsehair were put in for drainage, and the dura was sewed with antiseptic catgut. The removed bone disk, which had been kept in a warm sublimate towel, was freed from the adherent lead by means of a chisel and replaced in the opening. No antiseptic or other irrigation was used in the wound, the blood and bone-dust being removed with sterilized gauze. The wound was sutured, leaving an opening for the horse-hair drain, and dressed with iodoform, sterilized gauze, and a bandage.

The patient looked pale after the operation, but recovered well from the anæsthetic and there were no other untoward symptoms. The horse-hair drain was removed on the second day; there had been some bleeding. Sutures, removed the fourteenth day, were found dry, and union by first intention had taken place everywhere. In the evening of the twelfth and morning of the thirteenth and again on the twentieth day, there were slight epileptiform attacks. The headache had entirely disappeared. The patient left the hospital on the twenty-first day. He had been put upon twenty grains of bromide of sodium, and five grains of iodide of sodium *per diem*, which he has been taking to this day. He has had up to the present writing—forty-fourth day—no new attack. He looks brighter, more contented and livelier, than when first seen. The bone disk is firmly implanted in the hole in the calvarium, and around its margin is felt a slight thickening as of callus.

This case seems to confirm Lucas Championnière's statement that trephining, properly executed, is comparatively free from risk; it also exemplifies the utility of Macewen's plan of implantation of the bone disk. It is too early to judge about the therapeutic effect of the trephining, except that it has relieved the headache and done no harm.

CLINICAL MEMORANDA.

OBSTETRICAL.

A Case of Measles followed by Pneumonitis and Premature Labor in a Primipara.—On the evening of Sunday, December 1, 1889, I was called to see Mrs. D. F., a woman of about twenty-four years, in her ninth month of pregnancy. After an examination I found that she was apparently suffering from the premonitory symptoms of measles, two of her brothers having just recovered from that disease. She was very uncomfortable, with general prickly sensations; was at times in great pain through her limbs, and was constantly coughing. Temperature 103.5° F.; pulse 120. She was given a diaphoretic mixture and antifebrin, with directions to take the medicines alternately every half hour until she felt somewhat relieved. The next morning I found her considerably easier, cough less dry, and the eruption beginning to appear. Temperature was now 100° and pulse about 90. From that time until Tuesday evening she seemed better, and strong hopes were entertained that the disease would run its usual course. On Tuesday evening I found a decided change for the worse: cheeks flushed, cough again dry and hacking, with severe pain in the lower lobe of the right lung. Physical examination revealed dulness over this lobe, proving to my mind that pneumonitis had set in. Temperature 104.5° and pulse 124; breathing very short and labored. The case began now to wear a serious aspect, and I entertained grave doubts as to its termination. The patient was rolling in bed from one side to the other, the cough was intensely wearing, and caused severe paroxysmal pain in the abdomen. I expected from the severity of the symptoms that labor might set in at any moment; but she remained in this condition until Thursday night, when I found her still very restless, coughing severely at times, complaining of intense backache and bearing-down pains. The physiognomy in its concentrated expression of agony was such as I shall never forget. On examination I found the os well dilated; the liquor amnii had escaped probably during coughing; the head was well down. I gave her occasionally small doses of quinine. After an hour or so the pains, which had grown weaker, almost ceased, or, at least, became inefficient, and I advised the forceps. This was agreed to: the forceps were applied, and a few minutes after, the mother was delivered of a well-formed boy. The uterus did not immediately contract, and, fearing hæmorrhage, I administered a drachm dose of Squibb's ergot. This, together with vigorous manual manipulation, soon caused contractions, and in an hour the placenta came away. The patient was now given some strong coffee with two drachms of brandy. The child was somewhat spotted, as though he had gone through an attack of measles in utero; but certainly at the time of birth was well. The mother reacted well; but this was of short duration. Soon the fever and pain in the chest returned, and her life for the next five days hung in the balance. Her temperature ranged between 103° and 104.5°; the pulse was constantly over 120, very weak, and thready. By antipyretics and sponging the temperature was temporarily reduced, but soon rose again. She was given egg-nog and milk-punch as food, and, medicinally, carbonate of ammonium and digitalis, with antifebrin and quinine alternately. On the sixth day after labor the temperature fell from 104.5° to 101°, and the pulse to 100. After this it rose once or twice above this point, but it was apparent that the crisis was passed. She was now put upon iron, nux vomica, quinine, and digitalis.

There are several features in this case which probably assisted in the ultimate favorable result:

1. Holmes's dictum of beginning two hundred years before birth to attain a result might well apply to her—she comes from a sturdy, strong farmer's stock.

2. She had improved on this sturdy graft by out-door farm-work.

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3. She was a person of very cool temperament, and never once uttered a complaining word.

4. She was well nursed throughout her illness.

5. She was given during the entire course of her sickness nothing but *milk* with, at intervals, egg-nog and milk-punch.

6. And, finally, her case was studied from day to day. Medical treatment was specially directed to save (1) any unnecessary exertion; witness the application of the forceps, the Credé method of delivering the placenta without effort on the part of the patient. (2) Care in preventing even the slightest loss of blood. (3) Keeping up the strength of the heart with digitalis, ammonium carbonate, and brandy when indicated.

Literature.—Lusk[1] says: Rubeola is an infrequent complication of pregnancy, but is serious on account of its becoming hæmorrhagic, producing metrorrhagia, fatal to mother and child. Pneumonitis is a very frequent and dangerous complication of puerperal rubeola. And, again,[2] pneumonitis is an infrequent complication of the pregnant state, but affects the course of the latter very prejudiciously. . . . The fatal character of intercurrent pneumonia is referred to coexisting hydræmia, and to the inability of the poorly nourished heart to restore the balance of a pulmonary circulation disturbed by the consolidation of lung tissue and by the consequent impermeability of large capillary areas. Pulmonary œdema, resulting from progressive cardiac asthenia, "directly influences the fatal issue."

See also *W. W. Jaggard:* Pepper's System of Medicine, vol. iv. pp. 426, 430.

Fasbender: Ueber Pneumonia als Schwingersch. Complicatie. Beiträge zum Geburtsh., iii., 1874, Sitzungsber., p. 54.

Gusserow: Pneumonie bei Schwangeren. Monatschrift für Geburtskunde, xxxii., H. ii. 1868, S. 93.

Hirst: System of Obstetrics, vol. i. p. 449.

H. A. FOETUIN, M.D.
OVERISEL, MICHIGAN.

MEDICAL.

Local Applications of Sulphur in the Treatment of Diphtheria.—In the local treatment of diphtheria situated *above* the larynx, I find it of great advantage to preserve the false membrane as long as it will remain in its place. The diphtheritic membrane answers admirably, after having first applied a non-irritating disinfectant over it, to retain the medicament used and to *dress* the diphtheritic spots in the mucous membrane beneath.

The false membrane may be disinfected by irrigating it with a solution of any of the soluble disinfectants. The medicament afterward applied to the diseased areas should be slow of solution or insoluble. I have found washed sulphur to act well for this purpose. It may be insufflated, or, as I prefer, applied with a wad of absorbent cotton wound on the end of a stick, or with a large camel's-hair pencil. If well packed into the meshes of the membrane, from three to five applications in the twenty-four hours are sufficient; twice during twenty-four hours will answer in mild cases. Patients old enough to express themselves frequently assert, soon after the sulphur has been applied, that their throats feel better. Probably the sulphur, while in the meshes of the moist, warm, false membrane, takes up oxygen and sets free sulphurous acid, thus keeping the part in constant contact with this powerful germicide.

Calomel, also, answers well, but it should be used with care, and a known amount applied each time, and the applications made less frequently than sulphur. The applications of either sulphur or calomel should be made after the patient has taken nourishment, so that the medicament may remain on and in the meshes of the membrane for as long a time as possible. Of course, this precaution need not be observed when the nasal passages are treated.

FRANK N. DRAKE, M.D.
TUSCARORA, NEVADA.

[1] Science and Art of Midwifery, p. 251. [2] Ibid., p. 257.

HOSPITAL NOTES.

ANEURISM OF THE POPLITEAL ARTERY. AMPUTATION OF THE BREAST. DOUBLE HARELIP. RETENTION OF URINE. NÆVI OF THE SCALP.

Abstract of a Clinical Lecture delivered at the Hospital of the University of Pennsylvania,

BY JOHN ASHHURST, JR., M.D.,
PROFESSOR OF SURGERY IN THE UNIVERSITY.

DR. ASHHURST presented a patient with a moderately large, thin-walled aneurism of the right popliteal artery, associated with valvular disease of the heart, and described the symptoms of aneurism in general as those of a pulsating tumor in the position of a large artery, the character of the pulsation being expansile, and not simply an up-and-down motion, as in the case of a solid tumor. In the present case there was some enlargement of the superficial veins, due to the pressure of the tumor upon the deeper veins. In the treatment Dr. Ashhurst proposed first to resort to digital compression, and requested assistance from those of the class who were so disposed. But if in three or four days compression did not prove effective, he would abandon it and ligate the artery above the sac. Compression, he said, acts by lessening the blood-current which enters the sac, allowing this to contract and permitting laminated clots to form.

The next patient presented was a woman who had been in the hospital several months previously for a small ulcer of the breast, with a retracted nipple and considerable induration. Dr. Ashhurst at that time was not satisfied that the disease was cancerous, and after the use of adhesive straps and careful dressing the ulcer healed. A few weeks later, however, ulceration returned, accompanied by considerable pain, and, as he now believed the breast to be in a pre-cancerous stage, he proposed amputation. The retraction of the nipple he considered usually characteristic of scirrhus.

He began the operation by an elliptical incision above and below the nipple. The flaps were then dissected up, leaving no more fat than was necessary, and the dissection was continued around the tumor down to the pectoral fascia. He said that in removing a tumor it was desirable to avoid cutting into it, as, if the growth is malignant and is opened, there is a possibility that the cells will be distributed and form starting-points of new growths. After removing the mass he incised it and found it indurated, with a tendency for the cut surface to

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become concave, the latter being due to the presence of yellow elastic tissue. He did not open the axilla, as there was no induration of the axillary glands. The latter procedure adds to the gravity of such an operation, often gives an unsatisfactory ultimate result, and impairs the future usefulness of the arm, as the cicatrix tends to bind the arm to the side. For this reason he believes that in the majority of cases more good will be done by not opening the axilla unless there is strong reason to think that the glands are involved. After the hæmorrhage had been controlled he made a small opening in the flap, through which he inserted a drainage-tube. He then closed the wound and applied an antiseptic dressing and bandage, stating that if oozing occurred a second bandage would be applied with more pressure. The dressing would probably not be disturbed for several days or a week.

The next patient was a baby with double harelip. When, as is unusual, the harelip is double, the portion between the two clefts, corresponding to the intermaxillary bone of animals, often projects, as it did in the case before the class. The protruding portion turned up and was attached to the columna of the nose, but there was no cleft palate. Dr. Ashhurst first separated the columna from the projection, and cut this away with strong forceps. This was followed by some bleeding, which was checked by touching with a Paquelin cautery. The columna was then trimmed into a triangular shape. An important point in the operation was to separate freely the lip from the bone on each side, so that the former might be drawn well forward without much tension. The edges of the clefts were then freshened, in a concave direction, so that the resulting cicatrix would be longer than the natural depth of the lip, the object of this being to prevent the formation of a notch as the scar contracts. To control hæmorrhage while the edges were being freshened the operator used spring clips. He then inserted the pins, passing them through the entire thickness of the lip, which he had found the most satisfactory method, and reinforcing them with several silk sutures, and the usual figure-of-eight. A small piece of cotton saturated with compound tincture of benzoin was placed over the wound, and over this a strip of adhesive plaster. The pins should be removed on the third day, but the sutures and figure-of-eight ligatures allowed to remain two days longer.

A man was then presented suffering from retention of urine, caused by urethral stricture. Dr. Ashhurst said that he would first try to pass a catheter, and if he failed in this would open the urethra through the perineum. As stricture always occupies that portion of the canal in front of the prostatic part, by opening the urethra at the apex of the prostate we are certain to get behind the stricture, which can be dealt with subsequently.

In the present case the patient was carefully covered with blankets, as it is important to prevent chilling; and Dr. Ashhurst began with an ordinary sized catheter, not expecting to pass it into the bladder, but to determine the seat of obstruction. The stricture was found to be quite anterior and would not admit the catheter. He then used a filiform bougie with a corkscrew-shaped end, which readily passed, and over this was threaded a tunnelled catheter. This passed down to and was arrested by a second stricture. A smaller tunnelled catheter was then substituted, which readily entered the bladder guided by the filiform bougie. The instrument was then tied in place, and in twenty-four hours it would be found that a larger bougie could be passed. The stricture would then be treated by gradual dilatation.

The next patient was a baby with two nævi of the scalp and others on different portions of the body. Those on the trunk were not sources of disfigurement and required no treatment. For the largest nævus on the head Dr. Ashhurst said that he would employ the quadruple ligature, ligation being the most satisfactory method of treatment, and rarely followed by unfavorable results. He has had but one death following ligation of a nævus —a child operated on at the Children's Hospital. The nævus was at the root of the neck close to the great vessels. After the operation the child was taken out by the mother, an intemperate woman. It died some time later, but it was not certain whether the result was to be attributed to the operation or to neglect.

The quadruple ligature is applied by two needles passed through the base of the tumor at right angles to each other, each needle having a double thread. The needles are then removed, leaving four threads. The ends of these threads are tied together so as to make a continuous ligature. The strain, of course, comes on the last knot, and it is this that accomplishes the strangulation of the growth. The last knot is tied slowly, so as to thoroughly constrict the mass. In a few hours the nævus will become black and a line of separation will form; the slough will then be thrown off and a granulating surface remain. To the smaller nævus on the scalp Dr. Ashhurst used fuming nitric acid, working it in with a small stick until a thick slough formed. This, when it separates, leaves a healthy surface.

MEDICAL PROGRESS.

The Induction of Premature Labor.—M. BOISARD has recently contributed an excellent paper upon the usual means employed to induce premature labor. Considering first the uterine douche, he gives it his unqualified condemnation, and believes that the process is one which should be absolutely rejected, being slow, unreliable, and dangerous. Before contractions can be induced, it is often necessary to use the douches three or four times daily for four or five days: often they fail entirely. Moreover, they act only because of the traumatism caused, or, in the words of the author, they are a sort of aquapuncture. Fatal accidents with the method have been reported by Tarnier, Simpson, Olshausen, and others. Pinard has made a number of experiments which show that gentle irrigation is absolutely powerless to provoke labor.

Among the mechanical agents used for this purpose the most usual are sponge and laminaria tents. If either is used, it should be the latter, as it is much more difficult to render sponge aseptic. Tents, however, have the disadvantage of slipping out of place, of dilating slowly, and, particularly with the laminaria, successively larger tents must be introduced. Their use should be confined to primipara in whom the os is small and rigid.

Puncture of the membranes, though infallible, is dangerous, slow, and inconvenient; often causes lesions

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of either the uterus or fœtus, and favors procidentia and abnormal presentations. There are certain conditions, such as hydramnios, in which the method is useful to produce depletion of the uterus.

The author then discusses the use of bougies and balloons, methods which he terms "excitor" and "excito-dilator." The insertion of a bougie is the simplest and most easily applied of all methods, but acts very slowly, sometimes fails, and has in a few instances caused accidents, such as perforation of the membranes and wounds of the placenta. It is usually necessary for the bougie to remain in the uterus for three or four days to produce contractions. The balloon dilators of Tarnier or Champetier offer the most satisfactory method yet described for the induction of labor. Champetier's dilator is better than Tarnier's, being larger, of a better shape, and not distensible. It dilates not only the os, but the entire vulvo-vaginal canal. With this instrument the average duration of labor is from twelve to fourteen hours. The disadvantages of the balloon are that it is sometimes difficult to adjust, and that it may cause rupture of the membranes, separation of the placenta, pushing back and alteration in the position of the child or prolapse of the limbs or cord. In eighteen patients treated by the author, there were two cases of ruptured membranes, one of placental separation, and three of prolapse: none of the cases terminated fatally in mother or child. Notwithstanding these disadvantages, the use of the balloon is the most rapid, safe, and satisfactory of all methods for the induction of premature labor.—*Journal de Médecine de Paris*, January 19, 1890.

The Treatment of Ozæna.—DR. MOURE, in *La Tribune Médicale*, writes that in a patient suffering from ozæna, the general condition should be modified by the administration of iodine, arsenic, etc., and, if possible, by a residence at the seaside, which usually gives the best results. The local treatment consists chiefly in the use of irrigations, which should be abundant and at a temperature of about 85° F. The author commences treatment by using one pint of water containing five drachms, either of sodium chloride, sodium bicarbonate, or potassium chlorate. Immediately after this he uses an antiseptic solution, varying the antiseptic from time to time. The following may be used at the beginning of treatment:

℞.—Carbolic acid . . . 2½ drachms.
Glycerin . . . . 1½ ounces.
Alcohol . . . . 6 drachms.
Water . . . . . 5 ounces.—M.

One teaspoonful is to be added to one-half pint of warm water and used as an irrigation. After this solution has caused a disappearance of the characteristic odor, usually within two weeks, it is replaced by a solution of chloral, resorcin, salicylic acid, sodium salicylate, or creolin. The latter is very irritating, and should be used in a weak emulsion, as follows:

℞.—Creolin . . . . 15 minims.
Alcohol . . . 2 drachms.—M.

One teaspoonful to a pint of tepid water. The following may also be used:

℞.—Aluminium aceto-tartrate 3 to 6 drachms.
Boric acid . . . 2 to 4 ounces.—M.

One teaspoonful to one pint of tepid water. After a time Moure uses the usual astringent solutions, and when the mucous membrane is dry the following:

℞.—Salol . . . . . 75 grains.
Vaseline . . . . 4 ounces.—M.

—*Journal of Laryngology and Rhinology*, February, 1890.

Rhubarb as an Anthelmintic.—According to the *Medicinisch-chirurgische Rundschau*, February, 1890, rhubarb, given in the following mixture, is an efficient remedy against oxyuris vermicularis, or thread worm:

℞.—Tincture of rhubarb . . 30 drops.
Magnesium carbonate . 3 grains.
Tincture of ginger . . 1 drop.
Water . . . . 3 drachms.—M.

This dose is to be administered three or four times daily.

Prescription for Dysmenorrhœa.—The following is recommended in the *Wiener medicinische Wochenschrift* for dysmenorrhœa:

℞.—Ext. of Indian hemp } of each ⅓ grain.
Ext. of belladonna }
Cacao butter . . . 1 drachm.—M.

Mix and make five suppositories. For five nights before menstruation a suppository is to be introduced into the rectum. [There certainly could be no risk in increasing the first two ingredients to twice the amount here given.—ED.]

Resection of the Sternum.—At a recent meeting of the Hamburg Medical Association DR. MENING showed a patient on whom he had successfully performed resection of the sternum eleven months previously. For nearly four years a sinus had existed at the left border of the sternum, and constantly discharged cheesy pus. The entire bone was roughened. A free incision in the form of a cross was made, the greater portion of the sternum, including half of the manubrium, the gladiolus, and xiphoid process were removed, together with a large part of the costal cartilages. The carious bone was nearly four inches in length. Behind the sternum was found a large collection of cheesy pus, which was carefully cleared away. No disturbance of the respiratory organs was noticed after the operation, the wound healed satisfactorily, and the patient entirely recovered. —*Deutsche medicinische Wochenschrift*, February 6, 1890.

Application for Erysipelas.—In the local treatment of erysipelas, PROFESSOR PETRESCO employs carbolic acid in the following mixture:

℞.—Carbolic acid . . . 14 minims.
Collodion } . of each 6 drachms.—M.
Glycerin }

An Inhalation for Phthisis.—PROFESSOR PETRESCO, of Bucharest, uses the following for inhalation in pulmonary phthisis:

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℞.—Eucalyptol, Oil of turpentine, Creasote, of each 3 drachms.
Iodoform . . . . . 7 grains.
Ether . . . . . 75 minims.—M.

To be used in an inhaler.

Insufflation for Ozæna.—COZZOLINO recommends the following powder for insufflation into the nostrils after the use of the douche in ozæna:

℞.—Salol . . . . . 35 grains.
Boric acid . . . . . 20 "
Salicylic acid . . . . 3½ "
Thymic acid . . . . 1½ "
Pulverized talc . . . 100 " —M.
—*La Médecine Moderne*, February 15, 1890.

Prescription for Gonorrhœa.—According to JULLIEN, the following is a good injection in the second stage of gonorrhœa:

℞.—Mercury salicylate . . 1 grain.
Sodium bicarbonate . . 15 grains.
Distilled water . . . 4½ ounces.—M.

The Non-operative Treatment of Anal Fistula.—GUYON believes that fistulæ which do not give rise to distressing symptoms should not be operated on, but treated by palliative measures. The stools should be rendered regular and soft, and scrupulous cleanliness must be insisted upon. Internally, iron associated with the bromides may be administered according to the following formula:

℞.—Bromide of potassium . . 75 grains.
Citrate of iron and ammonium 4 "
Syrup of orange . . 2 ounces.—M.

One tablespoonful twice daily.

After each stool the following suppository should be introduced into the rectum:

℞.—Iodoform . . . . . 2 grains.
Extract of belladonna . . ⅛ grain.
Cacao butter . . . sufficient quantity.
—*London Medical Recorder*, January, 1890.

The Abuse of Intra-nasal Treatment.—In the *Internationale klinische Rundschau*, December 28, 1889, DR. RETHI, of Vienna, enters a protest againt the indiscriminate use of the cautery and snare in the treatment of intra-nasal disease. Though neuroses arising from disease of the turbinated bodies may often be cured by operation, he has noticed that in some cases they are increased, and that reflex conditions may even be originated by the cicatricial tissue which forms after operations. He reports three illustrative cases:

The first, a woman of twenty-five years, suffering from hypertrophic obstruction, was treated by thorough cauterization. In about ten days she began to suffer from violent and increasing attacks of headache and paroxysms of sneezing. Cocaine temporarily relieved the attacks, but later the author was obliged to excise the cicatrices, after which the patient recovered.

The second patient suffered from attacks of vertigo following cauterization of the turbinals with chromic acid. This case also was relieved by removal of the cicatrix.

The third case resembled the first, and was cured in the same manner.

Puncture and Injection in Hydrarthrosis.—DR. FALCOZ has recently described, in the *Archives Générales de Médecine*, his method of treating hydrarthrosis by puncture and injection.

The diseased joint is first carefully washed with soap, then with sublimate solution, and, finally, with a mixture of alcohol and ether. A small trocar is used, having first been heated, washed with carbolic water, and oiled. The joint is then punctured, the synovial fluid evacuated, and the cavity is washed out with carbolic lotion 1 to 20, about two ounces being injected. This fluid is drawn off, the articulation emptied, and the carbolic solution again injected as before. The small opening made by the trocar is then occluded by means of a little collodion, and the limb is placed in a plaster dressing. At the end of two days the dressing is removed, and if a little of the fluid still remains, energetic compression is applied. It is very seldom that, after the second dressing and a little massage, the limb does not resume its normal state.

Dr. Falcoz summarizes his results as follows: Of sixteen hydrarthroses, thirteen resulted in complete and permanent cure; one of the remaining three had acute arthritis; one was treated with tincture of iodine; one was still under treatment.

Ten hydrarthroses were treated by simple puncture, and six by puncture followed by antiseptic washings. One of these hydrarthroses was particularly interesting, inasmuch as the simple puncture brought no favorable result, but the patient was completely cured by puncture followed by injection.

The conclusion seems justifiable, that the treatment by puncture and injection, inefficacious in cases of acute arthritis, always succeeds in chronic hydrarthrosis. Whether the hydrarthrosis originates under the influence of rheumatism or traumatism is of little importance; the essential factor is that there should be no acute inflammation in the joint, in order that, after having freed the articulation of its liquid, the irritating properties of the carbolic acid solution may prevent its re-formation. The operation, without being in the least complicated, exacts rigorous antiseptic precautions, neglect of which could easily transform a simple chronic hydrarthrosis into a purulent arthritis.—*Medical Chronicle*, February, 1890.

Ammonium Picrate in Malaria.—DR. STUDENEZKI has recently administered ammonium picrate, as recommended by Dr. H. M. Clark, in sixty-two cases of intermittent fever. He is of the opinion that the drug is valueless as a substitute for quinine, as it does not lower the temperature; but, instead of causing gastric disturbances, it relieves them if they exist. The author considers that the drug is indicated in patients suffering from apyrexial forms of malaria, and who have not become cachectic. He thinks it may be given with advantage on the afebrile days of an attack of ague. Six grains may be taken in twenty-four hours without unpleasant consequences.—*Lancet*, February 15, 1890.

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SATURDAY, MARCH 8, 1890.

THE VALUE OF VIVISECTION RECOGNIZED BY ITS ENEMIES.

DURING the past week members of the Anti-vivisection Society have caused the arrest of Dr. Benjamin Shimwell, of Philadelphia, upon the charge of having been guilty of "wanton cruelty" to an animal upon which he demonstrated to a class of students a new modification of Senn's operation for wounds of the intestine. While realizing that their failure to obtain an anti-vivisection law some years since necessarily prevents any general onslaught upon scientific research, these persons evidently intended in this instance to make a test case under the Cruelty to Animals Act, with the view of impeding the labors of other more prominent members of the profession, and ultimately preventing in this manner all vivisection in Pennsylvania.

Having subpœnaed a large number of witnesses for the prosecution, several of whom were physicians, the enemies of original work felt quite confident of the success of their cause, and were represented by the son of Mrs. Thomas Earle White, one of the leading members of the prosecuting society. On the other hand, the friends of the defendant were represented by Mr. Ezekiel Hunn and Mr. Beck, the Assistant United States District Attorney. During the trial before Magistrate Eisenbrown, the circumstances of the operation in question were described with considerable detail by the witnesses called by the prosecution and, finally, Dr. Owen Wister and Dr. Garrettson were placed upon the stand as experts, to testify that the operation was needless and cruel. The first gentleman confessed that he was not an expert, but an ordinary physician, and allowed, as did Mr. White, at least for the sake of argument before the court, that vivisection was of value, but only when performed for the establishment of a fact, and not when an operation had already been frequently repeated. In the latter cases he thought that it was unnecessary cruelty, but in the present instance was unable to testify as to there being any pain inflicted, because he persisted that he knew nothing of the case in point. In reply to a question by Mr. Beck, he stated that he did not even know what operation was performed, or how to perform it if he did, and he also asserted, on cross-examination, that the most eminent scientific medical bodies in this country thought vivisection of value. The position of the witness was evidently that of the individual between the devil and the deep sea, and he did his cause more harm than good.

The next witness for the prosecution was Dr. Garrettson, who, as Dr. Shimwell's chief at the hospital, was in fact, if not in deed, an accessory to the act, in that he allowed his assistant to perform such work in the institution to which he was attached. Dr. Garrettson replied to the questions put by Mr. White and the defendant's counsel: "If the operation was performed twenty times a day for the benefit of the students at a college it would not be too much. Though," he added, with a smile, "I'd rather drop through the floor than say so, as I am opposed to the practice of vivisection." This from a prominent medical member of the Anti-vivisection Society, and one who a few years ago asserted, on the stage of the Hall of the Y. M. C. A., that he had "seen great tears roll down the dogs' cheeks as they smelt the walls spattered by the blood of previous victims," was received with applause by the persons present. So positive was Dr. Garrettson's testimony in favor of the defence, that the prosecuting attorney at once remarked that his case was lost, and that he confessed a defeat.

The court-room was crowded with prominent members of the profession, notable among whom were Drs. H. C. Wood, W. W. Keen, E. E. Montgomery, William H. Pancoast, H. E. Goodman, Frank Woodbury, John B. Deaver, and others.

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Perhaps no better example can be obtained of two well-defined facts than the case just detailed. It illustrates the absurdity of a society made up of the laity, with a few medical men of peculiar ideas, attempting to dictate to one of the most learned, and at the same time the most kindly, professions in the world, as to what is or is not of value, and what is or is not unjustifiable cruelty; and it also shows that here, as in every instance where justice prevails, it is impossible for any ignorant individual or body of persons to interfere with the rights and privileges of an educated class simply because their opinions differ. But by far the most important result of this trial is to show one great dominant fact, namely, that because a man is an M.D., this is no reason for believing him a competent judge of all matters pertaining to medicine and surgery, and we congratulate Drs. Wister and Garrettson upon so frankly stating the truth concerning a branch of medicine with which they cannot be expected to be thoroughly versed, thereby avoiding disgrace to the medical fraternity, and affording an example to their deluded lay friends that they are not in every case experts and authorities.

Thus has one of the foolish freaks of perverted kindness once more killed itself by its own weapon, and we advise that the thousands of dollars spent annually in this silly crusade be devoted to the care and reformation of those of our own race who are sick morally as well as physically, and who are starving and freezing because of perversion of money from its proper humanitarian channels. Every one knows the limitations put upon the Society to Protect Children from Cruelty, and other similar institutions, because of lack of funds, and thousands of little ones die annually for the want of the breath of sea-air when the city's heat strikes them down, at a time when the anti-vivisection agitators are enjoying the mountains or sea, or at least spending money with an abortive and useless result, and direct harm to the future of medicine and surgery.

THE THERAPEUTIC USES OF IODOL.

ELSEWHERE in this number of THE MEDICAL NEWS is published a paper by DR. CERNA on the use of iodol, in which he details instances where the drug, when used internally or externally, did great good in diseases widely separated from one another. It has always seemed to us that the profession was too much inclined to pass this drug by as one which could only be considered a substitute for iodoform, and an almost useless addition to internal medicine. Some years ago Cervesato published the results obtained by him from its use in the treatment of scrofula and respiratory affections of a chronic type, and in the treatment of tertiary syphilis. He claimed that it does not readily produce iodism even when used in the dose of 15 to 45 grains a day, and that the stomach is not disturbed by its employment. Still further back Stembo wrote a paper asserting its value in diphtheria when it is applied locally to the affected area, using it alone, or in the form of a solution made up as follows: ℞.—Iodoli, ℈ss; alcohol, f℥ss; glycerini, f℥iiiss.—M. S. To be painted over the part.

The number of cases treated by him was seven, and every one recovered in from four to six days. The advantages he found consisted in its harmlessness, its lack of odor and taste, the painlessness of its application, as well as the avoidance of untoward after-effects.

In cases where a discharge from the middle ear needs a dry antiseptic powder iodol may be used in place of iodoform with success, and without the disagreeable smell of the latter drug. Under these circumstances Purjesz has found it useful in both the acute and chronic forms of this troublesome malady, as it always stopped the discharge in a few days in the acute attacks in his hands. When employed in the ear it may be applied once or twice a day, care being taken that it does not produce too much irritation in the part affected.

REVIEWS.

HISTORIA DE LA MEDICINA EN MEXICO DESDE LA ÉPOCA DE LOS INDIOS HASTA LA PRESENTE. (History of Medicine in Mexico from the Times of the Indians to the Present Epoch.) By FRANCISCO A. FLORES. Three vols. 8vo., pp. 1640. Government Press Offices, City of Mexico, 1886–1888.

WE hear so little from our sister Republic that we are sometimes inclined to believe that she is doing almost next to nothing with regard to medical or scientific matters in general. But we must confess that we have never examined carefully the position that Mexico occupies in the world of science, more especially in the world of medical science.

We forget, or perhaps we do not know, that the country has a great medical school in the City of Mexico, called the Mexican National School of Medicine (Escuela Nacional de Medicina), definitely established since the year 1833. At present it is magnificently fitted up with all modern improvements, and follows very closely in its teachings the French School of Paris. It has a fine faculty, most of whose professors have made their studies

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in Europe, and, so far as the teaching is concerned, it has very fair facilities for the study of medical science. The city has quite a number of good hospitals, and to show that our professional brethren are not entirely idle, there are, we can positively state, a number of medical journals published in the capital, and a few in the different States of the Republic, which constantly bring to public notice well-studied and highly interesting cases, and also original articles on medical and allied scientific subjects.

Again, strange as it may seem, Mexico has (which, perhaps, no other country on the American Continent has, with the exception, of course, of the United States) a medical history, a history which will, no doubt, interest not only medical but scientific people at large, as it involves a period of several hundred years, and is intimately connected, in great part at least, with the social history of those highly intelligent ancient Mexican races which once inhabited "beautiful Anahuac."

We have before us a book on such a subject. It consists of three large octavo volumes of 1640 pages. It is the *History of Medicine in Mexico from the times of the Indians to the Present Epoch*, written in an interesting and pleasing style by Francisco A. Flores, graduate in pharmacy, and at present a student of medicine. It is preceded by a masterly preface from the pen of the eminent Mexican physician and philosopher, Dr. Porfirio Parra. The work is published by the Press Offices of the Mexican Government. The first two volumes have been ready since 1886, but it appears that the work was not given to the public until last year, when the third and last volume was printed.

On the whole, the work is a most interesting one, and reflects great credit upon its young and intelligent author, it being certainly a most valuable contribution, not only to medical literature in general, but also to American medical literature; and in order to do justice to Mr. Flores's able production, we propose to give subsequently a series of as careful reviews of it as possible, reviews which, we hope, will convey to our readers clear ideas of the book under consideration, and also about the interesting subject of which it treats.

TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS, FOURTH SESSION. Vol. IV., pp. 382. Philadelphia: W. J. Dornan, 1889.

OF the many volumes of transactions which annually come to this office, few, if any, contain so much of interest, or so valuable evidence of the progress of medicine as does this one. In vol. iv. we find papers by such well-known men as Minot, Stewart, Weir Mitchell, Henry, Musser, and Forchheimer, as well as a large number of others of equal rank and standing. Still others of the Association joined in the discussions of the papers as they were read, and this adds not a little to the usefulness of the book. One of the papers which, just at present, seems of unusual importance is that of Ernst on the danger of the transmission of tuberculosis by the milk of cows. The article by Dr. Busey on the effusion of chyle or chyle-like fluids into the serous cavities is also of great interest, while the article of Musser upon cancer of the gall-bladder and bile ducts is the most exhaustive account of this condition which has yet appeared, and is followed by a very valuable bibliography and list of cases, evidencing an amount of literary research which only those who have done similar work can appreciate.

STUDENT'S AID SERIES. Vol. V.: ANATOMY, SURGERY, AND PHYSIOLOGY. 12mo., pp. 236. New York: G. P. Putnam's Sons, 1889.

THIS volume is another of the series to which we have already called attention in previous numbers. It contains Aids to Anatomy, by George Brown, M.D.; Aids to Surgery, by the same author; and Aids to Physiology, by B. Thompson Lownes, M.D. As these important subjects are all considered in a duodecimo volume of 236 pages, it can readily be seen that no very great space can be given to any one of them, and in consequence the subjects are dealt with most superficially. Examination of the book shows, however, that far more is contained in it than one would imagine, and we doubt not that it may be of some service, particularly to the student who chooses, by the purchase of several similar books, to acquaint himself with all the necessary facts for the examination room.

STUDENT'S AID SERIES. Vol. VI.: CHEMISTRY, FORENSIC MEDICINE, AND TOXICOLOGY. By E. E. A. SEMPLE, M.D., and W D. HEMMING, M.D. New York: G. P. Putnam's Sons.

AIMING merely to outline, without elaboration or discussion, the teaching of one or several schools in the particular branches indicated, this volume can fairly claim to fulfil its purpose. Rarely rising to the dignity of textbooks, the best realization of the object of such efforts demands that they clearly and precisely follow the views and system of one individual teacher. In endeavoring to become general in their usefulness, they are apt to be confusing so far as the necessities of the student preparing for his examination are concerned. For this reason, unless, by personal examination, he finds it corresponding sufficiently to the methods of his instructor, it would be unwise to recommend this work to the student in any particular school. As such works go, however, the volume is excellently compiled, its several subjects being carefully systematized, and its instructions stated clearly and briefly.

The book is divided into Inorganic Chemistry, Organic Chemistry, Legal Medicine, and Toxicology, the first two having been prepared by Dr. Semple, the latter two by Dr. Hemming. Although a foreign work, both compilers being residents of London, the differences in English and American laws are not sufficient to lessen the value of the chapter on Forensic Medicine, although most American teachers would probably hesitate to accept the classification of mental diseases and their discussion as given by Dr. Hemming.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, February 6, 1890.

THE EPIDEMIC OF INFLUENZA.

In the discussion of the Academy of Medicine, in which a number of well-known physicians of this city

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participated, there was a pretty general agreement as to the main features of the epidemic influenza and the severity of the complications. The only note of discord was struck by DR. F. H. BOSWORTH, who declared that, although his practice was chiefly in diseases of the respiratory tract, he had not seen anything in his daily work which warranted the statement that there was an epidemic of influenza. By an epidemic of influenza, he understood one which affected a large proportion of the people in a community, and which was accompanied by a peculiar and clearly recognizable train of symptoms. Colds were not most common in cold weather, but when the temperature is moderate and the atmosphere laden with moisture. He felt positive that whatever increase in the number or severity of the cases of respiratory disease had been noticed, could be explained by the unusual climatic conditions which had existed, aggravated by the influence of malaria. He thought it was nearer the truth to say that the epidemic was one of break-bone fever.

These radical views were not shared by the other speakers, for, as Dr. Jacobi said, the histories of previous epidemics show that they often occurred when there were no such peculiar climatic conditions, and that they had not infrequently visited snow-bound coasts. This statement was corroborated by Dr. Kinnicutt's remark that in the western part of this country the winter had been unusually severe, and yet the epidemic had been quite as extensive there as here.

DR. A. JACOBI formally opened the discussion by reading a paper upon the phenomena observed among children suffering from the influenza, the prophylactic measures that should be adopted, and the remedies that were of service in the treatment of the severe forms, and of the complications.

Children had not been frequent sufferers from the disease, and this was quite possibly due to their being less exposed to the inclemency of the weather. When they were attacked, the fever was usually moderate, possibly owing to modern methods of combating it, and the bronchitis was quite general, accompanied by but little dyspnœa, and with the usual scanty expectoration of childhood. Headache was an almost constant symptom, and was diagnosed in infants by the contraction of the frontal muscles and the dazed appearance of the little sufferers. Convulsions were occasionally observed, as was also delirium in a few cases having high fever. Vomiting was often present; loss of appetite the rule; and diarrhœa not uncommon. Conjunctivitis had not been among the first symptoms, and otitis media had only been occasionally observed. When the disease was complicated by pneumonia, bronchial breathing and bronchophony, which are usually prominent signs in the early stages of pneumonia in children, were not readily obtained; and dulness developed very slowly. The cases were frequently complicated by other conditions, such as pleurisy with effusion.

It is only after the second year of life that influenza affects children in the way described; before that time, the locality of least resistance is the alimentary tract. It was noticeable that the injected throats which are so common when scarlatina and diphtheria are prevalent, were not observed during this epidemic. When the oral cavity suffered, the tongue became red, the papillæ elevated, and even the gums were affected. Dr. Jacobi had met with the scarlatinous eruption mentioned by many writers in only two cases—one in a child of two years, having a slight fever, and the other where the temperature was 104°, and the whole surface covered with the eruption. Herpes had been seen occasionally, but urticaria not at all. Neither had he observed the paralysis mentioned by Da Costa. Pains in the extremities were very frequent, and in one case, where the ankle was the seat of a chronic epiphysitis, the influenza caused a marked exacerbation of the trouble.

Relapses of influenza were not so often observed in children as in adults, possibly because of the milder type of the disease, but more probably on account of the avoidance of the premature exposure and exertion which so frequently caused a return of the disease in older subjects.

There can be no doubt as to the miasmatic origin of the influenza in many well-authenticated cases. Dr. Watson, in his *Practice of Physic*, published in 1871, gave a notable instance of this. A ship having arrived on the coast of Devonshire during the prevalence of a land wind, forty of the crew were taken ill within half an hour, and on the following day no less than one hundred and sixty were on the sick list.

As regards the spread of the disease, and the question of contagion, E. A. Parker, in Reynolds's *System of Medicine*, calls attention to a number of cases occurring in the last century, which were traced to direct contact. It has been noticed in hospitals, that patients in adjacent beds caught the disease first. The disease seems to be not only miasmatic, but also intensely contagious, with a very short period of incubation.

In the light of this knowledge, it seems wise to refuse such patients admission to general hospitals, and to consider carefully the advisability of closing the schools during such epidemics.

In the treatment of these cases, quinine in small doses was found beneficial; and acetanilide, antipyrine, and phenacetin all rendered good service; but of the latter class, phenacetin is the best on account of its less disagreeable effects upon the brain, heart, and skin. The gastric irritation is best controlled by the administration of resorcin, salicin, or the salicylates, it being remembered that for infants and children the doses of these remedies are proportionately large. The great danger of the disease is from prostration and heart failure; and in the cases where there is much gastric irritation, the debility is still further increased by the difficulty of nourishing such patients. Recourse must be had to rectal alimentation; and where heart failure is imminent, cardiac stimulants, such as musk and sulphate of spartein, must be boldly administered.

DR. W. H. DRAPER continued the discussion, limiting his remarks to the consideration of the complications and the sequelæ. The former were, like the symptoms, divisible into two principal varieties—1st, those included in sensory and motor derangements resulting from the effects of the materies morbi upon the cerebro-spinal system; and, 2d, those illustrating the manifold and severe lesions which the disease determines in the mucous membrane.

The former variety is characterized by functional disturbances of the cerebro-spinal system, and the latter by

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more or less severe inflammatory processes in the respiratory and alimentary tracts.

The most serious complications of the respiratory tract have been bronchitis, broncho- and pleuro-pneumonia, and pleurisy. Bronchitis has been confined mostly to one lung, and the expectoration has not been very abundant. In catarrhal pneumonia the signs of consolidation have been delayed for some days after the subjective symptoms have suggested its presence. The pleuritic element has been unusually pronounced, and the pain has been widely distributed and very intense. In croupous pneumonia, the pulse-respiration ratio has been more disturbed and defervescence has occurred somewhat earlier than is usual. Resolution has been slow, and in many instances this has been found to be due to the presence of small empyemas.

One case which illustrated the tendency occasionally shown by this disease to spend itself on the alimentary tract, at first simulated typhoid fever, and, later, colitis; but inasmuch as two cases of ordinary influenza occurred in the same family with pulmonary symptoms, it seems reasonable to suppose that this case was one of the rare forms in which the pulmonary catarrh is supplanted by the intestinal lesion.

DR. DRAPER had not seen any complications affecting the genito-urinary tract, and repeated examinations of the urine had not shown the presence of as much albumin as is common in other infectious diseases. Among the nervous complications may be mentioned neuralgias, which frequently make their appearance after the subsidence of the febrile and catarrhal symptoms, and are more or less periodic. They follow the course of the main nerve trunks and are aggravated by movement—two features indicating that the lesion determining them is a perineuritis.

Alcohol has been largely recommended both as a prophylactic and a curative agent; but from a study of cases, both in hospital and private practice, Dr. Draper had come to the conclusion that except in very moderate doses, it was decidedly detrimental. He had been very much impressed with the analogies presented by the influenza to other infectious diseases, and particularly to cerebro-spinal meningitis; and he thought the mucous catarrhs may perhaps be entirely due, as the cerebro-spinal symptoms are, to the effect of the poison on the vaso-motor system. This seems to be the only way to account for the great variety of the lesions and the sudden and overwhelming massive congestions.

DR. F. P. KINNICUTT then took up the subject, dwelling more particularly, however, upon the marked suicidal tendencies evidenced in some cases, and the peculiarities of the pulmonary complications. A nurse in St. Luke's Hospital suffered from vivid hallucinations of sight for several days following the febrile stage of the influenza. A rather remarkable family group had come under his observation in which the first child taken sick had only a single convulsion, followed by a well-developed broncho-pneumonia with tardy convalescence; the second child had slight convulsions from time to time during the week following the onset of the disease; and the third child, an infant of eighteen months, with no other symptoms excepting moderate bronchitis, had severe and almost incessant convulsions for a week, and then died. Such remarkable disturbances are seen in but few of the infectious diseases.

Broncho- and primary lobar pneumonia have occurred with nearly equal frequency in both hospital and private practice; but the severity of the former in adults, with an unusually free capillary hæmorrhage, as shown by bright red blood in the sputa, and the frequency with which the latter variety has involved both lungs, show most clearly the influence of the influenza upon them. In a case of pneumonia which terminated fatally the autopsy showed a lobar pneumonia in the stage of red hepatization in one lung and evidences of broncho-pneumonia in the other.

The cases of influenza which have occurred in St. Luke's Hospital may be summarized as follows: 15 cases of lobar pneumonia, both lungs being involved in 4, with 7 deaths; 9 cases of broncho-pneumonia with 3 deaths. An examination of the hospital records for the preceding six months showed that out of 16 cases of lobar pneumonia only 3 involved both lungs.

DR. M. A. STARR said that 42 per cent. of all the cases under his observation during the past six weeks had been attacked by the influenza, and then mental depression and peripheral nervous disturbances were pronounced. In many cases this mental depression amounted almost to a mild melancholia, and three of them had a decided suicidal tendency, associated with a slow pulse occasionally alternating with a very rapid one. In one case the pulse rose to 120 for periods of from fifteen to thirty minutes.

After certain epidemics chorea and poliomyelitis occur more frequently, and the movements of the former are temporarily increased in patients already suffering from the disease; but such changes had not been noticed in connection with the present epidemic. The pains of locomotor ataxia had, however, been perceptibly increased.

DR. R. GUITÉRAS, who had been fortunate in observing a considerable number of cases of the cutaneous variety, spoke particularly of these forms. From a diagnostic point of view, the most important variety was what he would classify as *Influenza Erythematosa*. He cited several cases of this in which there was a general blush of the body surface with rise of temperature, angina, reddened tongue, and other symptoms closely resembling scarlatina. Six cases were also observed in the New York Foundling Asylum. Apparently this form is most common in adult females. The eruption usually disappears within twenty-four hours.

In erythema the eruption is not punctate and is of a faint bluish-red tint; the tongue is covered with a heavy white coating; the papillæ are enlarged; and the skin is always moist. In scarlatina, on the other hand, the eruption is fine, punctate, of a scarlet color; the tongue is not so thickly coated and has a more distinctly strawberry appearance; and the skin is hot and dry.

Herpes labialis and miliaria have been occasionally observed, and Dr. J. H. Byron has noticed among the Italians at the New York Dispensary a peculiar bright red, coarsely papular eruption over the face, arms, and chest closely resembling erythema multiforme.

DR. BURKE has reported several cases of sore tongue, where the organ was large, red, hard, and so tender that pressure against the teeth was painful; the tongue "felt too large for the mouth," and was often allowed to protrude somewhat; the papillæ were enlarged and prominent, especially the group on either side of the

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middle of the tongue. This peculiar condition usually made its appearance on the second or third day, and lasted for about one week. It was not an accompaniment of any particular type of the disease.

The number of deaths from influenza reported to the Board of Health during the past week were 121, of which number Dr. Guitéras investigated, with their attending physicians, 86 cases, with the following results: 33 from lobar pneumonia, 21 from lobular pneumonia, 13 from bronchitis, 4 from meningitis, and 15 from other diseases. Of the remaining 35 cases, the causes assigned on the death certificates were: Pneumonia 19, bronchitis 8, and other diseases 8. Of the 33 cases of lobar pneumonia, 28 occurred in men, only 4 being over fifty years old and only 1 under twenty years. Of the 21 cases of lobular pneumonia, 15 were in women; and of the 13 cases of bronchitis, 9 were also among women. Only 2 deaths were directly due to the influenza—1 in a debilitated Italian, sixty-one years of age, and the other a baby eight days old.

DR. A. L. LOOMIS commented upon the remarkable tendency of the cases of bronchitis in adults to become capillary, and said that when it did reach the finer tubes, a pleurisy was immediately established outside of and corresponding to the seat of the circumscribed capillary bronchitis. Convalescence was exceedingly tedious. It is remarkable that very few cases of capillary bronchitis developed into acute tuberculosis of the lungs.

At the Loomis Laboratory investigations were in progress with a view of establishing the existence of the peculiar bacillus of this disease, and many varieties of bacilli have been inoculated upon animals, but so far without success. He did not think that the lower animals were, as a rule, susceptible to this influenza.

In connection with the question of contagion, and the spread of the disease, it was interesting to note the success that had attended the quarantining of the Saranac Sanitarium for phthisical patients.[1] All connection with the outside world had been cut off, and not a single case of influenza had developed within that institution.

CORRESPONDENCE.

A HOMŒOPATHIST'S DEFENCE.

To the Editor of THE MEDICAL NEWS,

SIR: The time for vehement denunciation in scientific discussion has, or at least should have, long since passed. The unknown has so oft' been made plain, and the apparently impossible so frequently wrought, that the improbable dare not be thoughtlessly set aside. Medicine affords no exception. Ridicule and denunciation afford no argument against facts, and certainly they never can destroy truth, even though for a season they may retard its growth and development.

Thus ran my thoughts on reading an "An Ethical Question," by S. Solis-Cohen, M.D., which was honored by a place in a recent number of your journal. If I understand his article, he makes the following assertions:

First. There are those in the homœopathic school who implicitly follow Hahnemann, and there are others who, while they accept the law of similars as the law of cure, still do not accept Hahnemann's theories relative thereto.

Secondly. He asserts *his* view that to be a homœopathist one must accept all of Hahnemann's theories.

Thirdly. He asserts that Hahnemann rejected anatomy, physiology, semeiology, pathology, etc., and,

Fourthly. That consultation between the members of the two schools is practically impossible.

For the first and fourth of these assertions we will not ask time or space for a reply.

The second and third, however, are so glaringly false, that we desire, most heartily, to dissent.

To be a homœopathist does not of necessity involve a belief in, or acceptance of, any of Hahnemann's theoretical explanations. In fact, Hahnemann himself declares, in reference to theoretical explanations of the therapeutic law, § 28 *Organon*, "I attach but little value thereto."

Kepler accepted the Copernican system, but only to frame new and better explanations. In fact, the three laws known by his name have firmly established the law so imperfectly known to Copernicus. As well might the astronomer of to-day be denounced as a non-believer in Kepler's laws, because he rejects the erroneous fancies of that most astute observer, as to denounce the homœopathist who accepts the law, but rejects the theoretical explanations of Hahnemann. Nor would we reject Kepler's great laws because, that, under the influence of the faulty mechanical knowledge of his day, he evolved the theory of the vortices. Who will reject the Rudolphine tables because of the few errors they contained? Perfection is nowhere found.

Neither dare we require of Hahnemann faultless theory nor superhuman perfection. The law is true—the theories induced thereby, and even the results of man's application of the law, may abound with error. Our duty is to eliminate the error and develop the great truth expressed in the law. Blind adherence never has been, nor can be, yielded. With all honor to the founder of our school, we have been homœopathists, not necessarily Hahnemannians. Even in the copy of the *Organon* from which Dr. Cohen quotes may be read the following from the pen of Dr. Hering, one of Hahnemann's most ardent adherents:

"Whether the *theories* of Hahnemann are destined to endure a longer or shorter space, whether they be the best or not, time alone can determine; be it as it may, however, *it is a matter of minor importance.* For myself, I am generally considered as a disciple and adherent of Hahnemann, and I do indeed declare that I am one among the most enthusiastic in doing homage to his greatness; but, nevertheless, I declare also that since my first acquaintance with homœopathy (in the year 1821) to the present day I have never yet accepted a single theory in the *Organon* as it is there promulgated. I feel no aversion to acknowledge this, even to the venerable sage himself. *It is the genuine Hahnemannian spirit totally to disregard all theories,* even those of one's own fabrication, when they are in opposition to the results of pure experience. All *theories* and *hypotheses* have no positive weight whatever, except so far as they lead to new experiments, and afford a better survey of the results of those already made."

"Whoever, therefore, will assail the theories of

[1] See THE MEDICAL NEWS, February 15, 1890.

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Hahnemann, or even altogether reject them, is at perfect liberty to do so; but let him not imagine that he has hereby accomplished a memorable achievement. In every respect, it is an affair of little importance."

Thus wrote Hering in 1835, yet he ever remained one of the most enthusiastic teachers of Hahnemann's law. The law we accept. Theoretical explanations of the law will be liable to change until science has become perfect.

The assertion that Hahnemann rejected the true teachings of anatomy, physiology, pathology, and diagnosis is absolutely groundless. In fact, in a paragraph just preceding that from which Dr. Cohen quotes in substantiation of his assertion, Hahnemann refers to "the meritorious work of many physicians in relation to the auxiliary sciences pertaining to medicine, such as the advancement of physics and chemistry, natural history in its different branches, and in that of man in particular, anthropology, physiology, anatomy, etc. He then especially declares, "I shall now only consider the practical part of medicine—that of curing." Can any unprejudiced reader require more explicit statement from Hahnemann, as to his reason for not further referring to these branches? His writings were directed to a profession supposed to be learned in such necessary matters; reference to them would therefore be unnecessary, save in so far as they were employed as foundations for erroneous theories. Any reader who will carefully peruse the introduction to the *Organon*, either in the original German, or in the Wesselhoeft translation, will readily see how different was Hahnemann's idea from that ascribed to him by Dr. Cohen.

The criticism in the first paragraph on page 433, vol. lv., of THE NEWS manifests either a lack of understanding, or an evident desire to misquote, on the part of the critic, for had he read, § n. to § 7, *Organon*, he would have observed that Hahnemann recommended surgical procedures when necessary; he says, "extract irritating particles causing inflammation of the cornea," "avert the danger of a hæmorrhage, by exposing and ligating a wounded artery," "crush a vesical calculus," "open the imperforate anus of the newborn child:" while in § 13, Hahnemann speaks of "those forms of disease not belonging to manual surgery," and again, in § 186, he speaks of injuries to the body requiring mechanical skill, and refers to "extracting foreign bodies," "opening the cavities of the body to remove a molesting substance," as a tumor, "or to draw off effused or accumulated fluids," etc., etc. Evidence such as this shows most clearly that Hahnemann looked upon a thorough education in the collateral branches of medicine as essential, both to the development of correct judgment, as well as in rendering efficient aid to the sick. Hahnemann's opposition was directed against "the habit, wherewith so many physicians ambitious for fame have wasted both powers and time," "of weaving into so called systems, mere empty fancies and hypotheses regarding the internal nature of the life-processes, and of the origin of disease." The origin here referred to is not the *causa occasionalis*, which, he says, "It is taken for granted that every intelligent physician will search out and remove," but that hidden dynamic cause which is directly related to that all-pervading dynamis called the vital force.

That Hahnemann did not look upon this active force, or "dynamis," as independent of matter, will be evident to every reader of his essay on the "Mode of Propagation of the Asiatic Cholera," published in 1831, about a year before the fifth edition of his *Organon* went to press. Speaking of the spread of the disease through careless physicians and nurses, he says, "they take away with them in their clothes, on their skin, on their hair, and probably also in their breath, the *invisible* (*probably animated*) *and perpetually reproductive contagious matter* surrounding the cholera patient, and this *contagious matter* they unconsciously and unsuspectingly carry along with them throughout the town." Words of such import might well be attributed to a believer in the germ theory of to-day. While, however, Hahnemann acknowledged the necessary presence of matter, he, nevertheless, held to the view that such matter was necessarily imbued with a peculiar dynamis, through which it became endowed with potent virulence, just as to-day many view the bacteria and other micro-germs as but conveyers of poison—not the poison itself.

Again, Dr. Cohen asserts that Hahnemann discards all attempts at diagnosis. This is most certainly false; and for proof let me but refer to the careful diagnosis of "the genuine scarlet fever," as well as the differential diagnosis between it and the then existing "red miliary fever," falsely called scarlet fever, "Lesser Writings," pp. 479-483; also his remarks on "Asiatic Cholera," pp. 753-756.

In fact, he urged upon the profession the necessity for closer observation and more accurate individualization in disease, suggesting that class names should be used for convenience; he says, "we ought rather to say, a species of chorea, a species of ague," etc. Knowing that disease is constantly changing, new forms and combinations constantly arising, as instanced in f. n., § 73, *Organon*, he feared the misleading effect resultant upon the use of a specific name for such varied states. Hahnemann urges physicians to employ the "greatest care and systematic methods," and denounces "the loose and inaccurate methods in general use." Just here let me remark that in a letter written shortly before Hahnemann's death to Dr. Hering, he asserted the utility of pathology, if once founded upon a scientific basis.

The homœopathic school still adheres to the grand and comprehensive law discovered by Hahnemann, which is, and ever will remain, the only direct law of cure. We do not deny that palliation of diseased states may be secured through either of the other principles of drug action, and thus nature be imperfectly helped to a cure. We claim, however, for the law of similars, that under it we possess the speediest, safest, and most certain means whereby cure may be effected.

Regarding the infinitesimal dosage, sneered at by Dr. Cohen, we need only refer to the half century of successful practice of such men as Hering, Jeanes, and others, as sufficient answer. Infinitesimal doses, though strongly urged by Hahnemann in the *Organon*, were not the only doses recommended or used by him. In his article upon "The Cause and Prevention of Asiatic Cholera," he recommends drop doses of a strong solution of camphor given very frequently, "at least every five minutes;" he also suggests that some shall be evaporated near to the patient, that it may be inhaled; and further, recommends that enemata of warm water

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containing small quantities of camphor be employed. This certainly is sufficient to show the falsity of the assertion that to be a homœopathist the prescriber must give infinitesimals only.

In reference to the term "spiritual," criticised by Dr. Cohen, let it be remarked that Hahnemann nowhere in the original uses the word; he says, "Geistartig," "dynamisch," *i. e.*, "spirit-like, dynamic." This term is applied to the force, which is invisible. Again, Hahnemann nowhere ridicules the *vis medicatrix naturæ* in the sense placed upon his words by Dr. Cohen. He ridicules the efforts made "to follow unthinking and unreasoning nature," just as Dr. Cohen would ridicule the engineer who would plan a canal in most tortuous lines, because, forsooth, nature thus finds for her rivers outlets to the ocean. Man's reason should discover better ways.

In conclusion, let me urge the medical profession to accept Hahnemann's challenge, "Machts nach aber machts recht nach." Let the experiments be made in the spirit of true investigation, not in a spirit of wanton opposition and bigotry. Let it be a search for the truth. Let homœopathy—*i. e.*, a practice in accordance with the "law of similars," "the single remedy," and the "smallest dose that will cure," three points upon which Hahnemann based his work—stand or fall by the test. Theorizing teaches nothing: education, trained observation, and experiment alone will suffice.

AUG. KORNDŒRFER.

1728 GREEN ST. Nov 20, 1889.

TOLEDO.

To the Editor of THE MEDICAL NEWS,

SIR: A medical centre may be defined to be concentrated medical influence, the lengths of the radii being but the estimates of the strength and worth of the concentration, by those cognizant of its existence.

These medical centres have points of similarity to other concentrations: the electric light, for instance, increases in apparent power as one approaches it. For this reason, perhaps, the medical influence of Toledo is not greatly felt in Chicago or other distant points.

The charitable-mindedness of our neighbors allows us to indulge in the pleasurable belief that our influence goes out to and beyond the towns around us.

A growing, hustling city of 100,000 inhabitants cannot but present points of interest to medical men. Spread over a large area, and generally upon sandy soil, we have two factors in the maintenance of health not possessed by most cities, and our low mortality, scarcely above the lowest, is one of our prides.

A physician who leaves a country practice of $1500 a year and comes here to locate makes a mistake, unless he has reasons other than a desire for a large practice. The exact number of physicians in Toledo is unknown, but, as elsewhere, the profession is overfull.

Some of our best physicians are connected with one or the other of two medical colleges, in which altogether there are about thirty-five students.

The Toledo Medical Association, with about sixty members, meets twice a month, and the meetings are growing in interest, and the quality of work done is good. One medical journal is published monthly.

The Northwestern Medical Association, born in Toledo, and now nineteen years old, meets here this week.

We have several hospitals, one being partially under the control of homœopaths.

Both lay and professional men have been searching for the cause of the unusually large number of cases of diphtheria that have occurred lately in two wards of the city. Dogs and cats have been accused of carrying the disease from one family to another, and faulty sewers and other forms of nastiness of generating the poison. The mortality of cases reported has been twenty-five per cent.

Eye and ear, and throat and nose are the only specialties that seem to be profitable here, and with these exceptions every physician does a general practice, not because we do not like to send our patients to specialists, but because each one feels the need of the work himself.

Several of our physicians were in Europe this summer, and thus, perhaps a little slowly, but surely, are we becoming cosmopolitan.

NEWS ITEMS.

Tests of Electrical Execution Apparatus.—At the New York State prison a bull was recently made the subject of an experiment with the electrical machine designed for the execution of criminals. The animal was instantly killed with a voltage of 900. The speed of the dynamo could not be steadily maintained much above a voltage of 400, in consequence of incomplete machinery. The instruments for measuring the currents were trustworthy, being those that had been furnished for the occasion by the Johns Hopkins University. The apparatus has a capacity of 1500 volts, which is more than will be needed. Dr. A. D. Rockwell, of New York, was present as one of the State commission of experts, and stated that he was convinced that 1000 volts would invariably kill a human being painlessly, and that as a protracted contact is unnecessary, the disfigurement of the body by burning will be avoided. In regard to the electrical resistance of the human body, as compared with that of the bull, the opinion is that it is much less.

A Psychological Museum.—A curious museum has been established at Florence, Italy, by ministerial decree, to be known as the "Psychological Museum." It might be termed the museum of the human passions, if the officially announced programme is carried out. The eminent ethnologist and sanitarian, Dr. Mantegazza, has been charged with the development of the new undertaking. Lectures on experimental psychology will, it is stated, be delivered under the direction of Dr. Mantegazza.

A Definition of Faith-cure.—The Rev. Dr. Lyman Abbott, of Brooklyn, is credited with giving the following definition of "faith-cure" from his standpoint: "When I get sick, I will show my faith in God by securing the best doctor I can find, getting the best human skill, and following the directions given me by a good physician. Faith does not consist in refusing to take medicine, but it is the using of all the means of cure which is given us to use, and medicines have been shown to be one of those means."

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The Health of London in 1889.—The *Lancet* of January 4th contains a summary of the mortality in London during the past year, from which the inference is drawn that the health of that city was by far the best that has been known in modern times, or since registration reports have been kept. The total number of deaths was 75,683, a smaller number than in 1870, when the population was a million less than in 1889. The death-rate was 17.5 per 1000, while in 1888 the rate was 18.5 per 1000, a gain of one in the thousand, despite a growing population. This is so remarkable that the *Lancet* questions its reliability, but concludes to accept it as a mark of the sanitary improvement of that great metropolis. The difficulty in the way of getting a confessedly genuine death-rate is seen in the fact that, as there has been no census in London since 1881, the basis of population for the computation of a death-rate must be the estimate of the registration authorities; and the suspicion constantly arises that the estimate has been placed too high, year by year.

Electric Lights in the New York Hospital.—The lighting of the New York Hospital has been changed from gas to electricity. With this change it is thought that the quality of the respirable air in the institution has improved, and that the temperature of the wards is under better control. The plant includes 700 Edison lamps. The operating room is fitted out with these lamps, so that operations may be performed at any hour of the night or day.

Bequest to the Maine General Hospital.—At the death of Mrs. H. H. Hill, of Augusta, Me., the Maine General Hospital will fall heir to $40,000 bequeathed by the late Dr. H. H. Hill.

Suit against an Ophthalmic Surgeon.—Dr. Hermann Knapp, of New York City, is the defendant in a suit for $5000 damages. A death from pneumonia took place at his ophthalmic hospital after an operation for cataract. The allegation of the representatives of the deceased is that the fatal pneumonia might have been obviated by better attendance and care. The rejoinder is that good treatment and care were employed, and that pneumonia may arise in the best of surroundings and in the least expected manner.

Meeting of the Fifth District Branch of the New York State Medical Association.—The next meeting of the Fifth District Branch of the New York State Medical Association will be the sixth annual meeting, to be held in Brooklyn on Tuesday, May 27, 1890. All Fellows desiring to read papers will please notify the secretary, E. H. Squibb, M.D., P. O. Box 94, Brooklyn, N. Y.

A Monument for Washington's Mother.—Largely through the instrumentality of Marion Harland, who is well known by reason of her essays upon housekeeping and the care of infants, a scheme has been set on foot with the object of collecting a sufficient sum to renovate thoroughly and finish the imperfect and partly ruined monument which was begun in 1843 over the grave of Mary, the mother of Washington.

As is well pointed out, Washington's entire training, both moral and physical, depended upon his mother's wisdom, owing to the early death of his father.

The *Home-Maker*, of New York, will receive subscriptions for any amount toward this purpose, and will give to the fund seventy-five cents out of every $2.00 subscription, provided that the subscription is marked, "For Mary Washington Monument."

Intubation in Italy.—The first intubation of the larynx for croup in Italy was recently performed by Dr. Egidi, of Naples, who still holds that tracheotomy is usually the preferable operation.

Hospital Appointments.—Dr. Byron Whitford has recently been made a visiting physician to the Rhode Island Hospital, *vice* Dr. J. W. C. Ely, resigned. Dr. Joseph H. Akers succeeds Dr. Whitford on the staff of out-patient physicians.

Since September, 1889, the affairs and departments of this hopital have been running smoothly and successfully under the administration of its young, but efficient, superintendent, Dr. John M. Peters, whose term of service as interne in the same institution expired but a few months previous to his appointment as superintendent.

Alcohol in Patent Medicines.—In the report on nostrums, proprietary medicines, and new drugs, which was read before the American Association for the Cure of Inebriates, is found in the appendix the following list of the results of the analyses of a large number of well-known patent medicines, which is of interest not only to the physician, but to the student of human nature, in view of the readiness with which charlatanism can hoodwink persons who in other matters are supposed to have the ordinary quantity of common sense:

	Per cent of Alcohol.
Dr. Buckland's Scotch Oats Essence . . . . (Also ¼ gr. morphine to the ounce.) A more insidious and dangerous fraud can scarcely be imagined, especially when administered as this is recommended, for the cure of inebriety or the opium habit.	35.
The "Best" Tonic	7.65
Carter's Physical Extract	22.
Hooker's Wigwam Tonic	20.7
Hoofland's German Tonic	29.3
Hop Tonic	7.
Howe's Arabian Tonic. "Not a rum drink" .	13.2
Jackson's Golden Seal Tonic	19.6
Liebig Co.'s Coca Beef Tonic	23.2
Mensman's Peptonized Beef Tonic	16.5
Parker's Tonic . . . . . "A purely vegetable extract. Stimulus to the body without intoxicating. Inebriates struggling to reform will find its tonic and sustaining influence on the nervous system a great help to their efforts."	41.6
Schenck's Seaweed Tonic . . . . . "Distilled from seaweed after the same manner as Jamaica spirits is from sugar-cane. It is therefore entirely harmless, and free from the injurious properties of corn and rye whiskey."	19.5
Atwood's Quinine Tonic Bitters	29.2
L. F. Atwood's Jaundice Bitters	22.3
Moses Atwood's Jaundice Bitters	17.1
H. Baxter's Mandrake Bitters	16.5
Boker's Stomach Bitters	42.6

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	Per cent. of Alcohol.
Brown's Iron Bitters	19.7
"Perfectly harmless. Not a substitute for whiskey."	
Burdock Blood Bitters	25.2
Carter's Scotch Bitters	17.6
Colton's Bitters	27.1
Copp's White Mountain Bitters	6.
"Not an alcoholic beverage."	
Drake's Plantation Bitters	33.2
Flint's Quaker Bitters	21 4
Goodhue's Bitters	16.1
Hartshorn's Bitters	22.2
Hoofland's German Bitters	25.6
"Entirely vegetable and free from alcoholic stimulant."	
Hop Bitters	12.
Hostetter's Stomach Bitters	44.3
Kaufmann's Sulphur Bitters	20.5
"Contains no alcohol." (In fact, it contains no sulphur, but 20.5 per cent. alcohol.)	
Kingsley's Iron Tonic	14.9
Langley's Bitters	18.1
Liverpool's Mexican Tonic Bitters	22.4
Pierce's Indian Restorative Bitters	6.1
Z. Porter's Stomach Bitters	27.9
Rush's Bitters	35.
Dr. Richardson's Concentrated Sherry Wine Bitters	47.5
"Three times daily or when there is sensation of weakness or uneasiness at the stomach."	
Secor's Cinchona Bitters	13.1
Shony's German Bitters	21.5
Job Sweet's Strengthening Bitters	29.
Thurston's Old Continental Bitters	11.4
Walker's Vinegar Bitters	6.1
"Free from all alcoholic stimulants. Contains no spirit."	
Warner's Safe Tonic Bitters	35.7
Warren's Bilious Bitters	21.5
Wheeler's Tonic Sherry Wine Bitters	18.8
Wheat Bitters	13.6
Faith Whitcomb's Nerve Bitters	20.3
Dr. Williams's Vegetable Jaundice Bitters	18.5

Impurities of Creolin.—WEYL, of Berlin, has recently made comparative studies of Pearson's and of Artmann's creolin. Creolin furnished by the latter manufacturer was free from nitro-benzol and carbolic acid, but contained naphthalin. In Pearson's creolin, carbolic acid was always present.—*Deutsche medicinische Wochenschrift*, February 6, 1890.

The Use of Resorcin in Whooping-Cough.—The most recent advocate of the treatment of pertussis by resorcin is DR. JOHN W. FARLOW, of Boston (*Boston Medical and Surgical Journal*, February 27, 1890), who reports two well-marked and severe cases in which a spray of resorcin gave prompt relief. In neither case was the usual treatment of benefit. At about the end of the second week of the disease, Dr. Farlow ordered a nasal and laryngeal spray of a two per cent. resorcin solution every two hours. Relief was almost immediate; sleep, which had hitherto been broken by paroxysms of coughing, became undisturbed, and by the fourth day the cough had disappeared, and the children were perfectly well. The atomizations were continued for a few days as a precaution, but there was no return of the cough. Two other children in the author's practice were also cured in a week by the same treatment.

Obituary.—DR. OTTO BECKER, Privy Councillor and Professor of Ophthalmology in the University of Heidelberg, died in that city on February 7th in his sixty-second year. For some years an assistant of von Arlt, in Vienna, he was called to succeed Knapp in the chair at Heidelberg in 1868, and, taking up the work so well begun there, he carried it splendidly forward. Thanks to him, the Heidelberg Eye Clinic has kept its place as a model institution for the treatment and the study of eye disease; and the report of his twenty years' work there, which he laid before the International Congress in 1888, accords with his numerous other publications in showing that ophthalmology has lost one of its strongest and ablest workers in his death.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 25 TO MARCH 3, 1890.

By direction of the Secretary of War, a Board of Medical Officers, to consist of CHARLES SMART, *Major and Surgeon*; VALERY HAVARD, *Captain and Assistant Surgeon*; LOUIS BRECHEMIN, *Captain and Assistant Surgeon*, is appointed to meet at Fort Leavenworth, Kansas, on March 15, 1890, or as soon thereafter as practicable, for the purpose of preparing a manual of drill and instruction for the members of the Hospital Corps, and to examine the equipment of the Corps with a view to its improvement.—Par. 9, *S. O. 47, A. G. O., Washington, D. C.*, February 26, 1890.

LORING, LEONARD Y., *Major and Surgeon.*—Having been found incapacitated from active service by an Army Retiring Board, the extension of leave of absence on surgeon's certificate of disability, granted him in S. O. 34, February 10, 1890, from this office, is, by direction of the Secretary of War, still further extended until further orders, on account of disability.—Par. 3, *S. O. 46, A. G. O., Washington*, February 25, 1890.

SMITH, JOSEPH R., *Lieutenant-Colonel and Surgeon.*—Promoted to be Surgeon with rank of Colonel, February 9, 1890.

BACHE, DALLAS, *Major and Surgeon.*—Promoted to be Surgeon with rank of Lieutenant-Colonel, February 9, 1890.

HARVEY, PHILIP F., *Captain and Assistant Surgeon.*—Promoted to be Surgeon with rank of Major, February 9, 1890.

PATZKE, J. H., *Major and Surgeon.*—The leave of absence for seven days, granted in Orders No. 25, Fort Huachuca, Arizona Territory, February 12, 1890, to take effect the 14th instant, is extended twenty-three days.—Par. 1, *S. O. 18, Department of Arizona*, February 17, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING MARCH 1, 1890.

RUSH, C. W., *Passed Assistant Surgeon.*—Ordered to the Navy Yard, New York.

AUZAL, E. W., *Passed Assistant Surgeon.*—Ordered to the U. S. S. "Galena."

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVI. SATURDAY, MARCH 15, 1890. NO 11.

ORIGINAL ARTICLES.

CHRONIC RHEUMATIC SORE THROAT.[1]

BY E. FLETCHER INGALS, A.M., M.D.,

PROFESSOR OF DISEASES OF THE THROAT AND CHEST, WOMAN'S MEDICAL COLLEGE, AND PROFESSOR OF LARYNGOLOGY IN RUSH MEDICAL COLLEGE, CHICAGO, ILLINOIS.

Synonym.—Chronic rheumatic laryngitis.

Definition.—This is a painful affection of the throat, chronic in character but varying much from time to time in severity, and attended by only slight physical changes in the parts involved. It usually affects the larynx, and, therefore, it has been described as rheumatic laryngitis; still, in many cases it involves the fauces, the hyoid bone, and, possibly, the trachea, and it sometimes does this without involving the larynx at all; therefore, the term chronic rheumatic sore throat is preferable. It is comparatively frequent, and has doubtless existed from time immemorial, but I have been unable to find any description of it prior to that which I gave at the Ninth International Medical Congress, held in Washington in 1887. The affection occurs mainly during the spring and fall of the year, but we also observe it during the winter, and there are occasional cases in which it continues through the summer months. It is more frequent in men than in women. All the cases that I have seen have been in adults from twenty to sixty years of age. It occurs among all classes with the same impartiality as rheumatism of other tissues.

Anatomical and Pathological Characteristics.—There are no anatomical characteristics, but usually there is slight congestion, circumscribed in character but variable.

Etiology.—It is due to the same causes as muscular or articular rheumatism.

Symptomatology.—It comes on insidiously in many cases, but in others suddenly; usually, however, the patient will have been complaining for months before he applies to the laryngologist for relief. Most of the patients who have come to me have previously consulted several physicians and have received almost as many different diagnoses, but all have feared either tuberculosis, syphilis or cancer, many of them having a fixed dread that they are suffering from cancer. The general health is not impaired. The patient complains simply of a localized pain, which is frequently referred to the cornu of the hyoid bone, and I have observed it more often on the right than on the left side. Next in frequency it is felt in the larynx, generally upon one side only. It may be felt, however, in the trachea, the tonsils, and sometimes in the side of the base of the tongue. This pain is increased by pressure in nearly all cases, perhaps in all, and it may be increased by phonation or deglutition, but it often completely disappears while the patient is eating. In any case it is liable to shift its position from time to time, though frequently it is persistent for a long period in one locality. Sometimes, instead of an actual pain the person will complain simply of a sensation of fulness or swelling of the part, or a feeling of dryness, itching or burning; or it may simply be a sensation of discomfort which he cannot well describe. Usually the voice is not affected, but it is common for these patients to complain of fatigue after using it a short time. We find no constitutional symptoms, no fever, and the pulse is not quickened excepting from alarm. Usually there is no cough, but in some cases, especially where the larynx is involved, a hacking and annoying cough is a symptom. The digestive organs may act perfectly, but ordinarily we find the tongue more or less covered with a white or yellowish-white coating, and although the appetite is usually good the patient is often troubled with eructations of gas from the stomach, and with flatus. The bowels are apt to be constipated. Upon laryngoscopic examination we may find localized congestion confined generally to a small spot in the region of the pain, and there is sometimes slight swelling. We find, however, that the congestion diminishes or disappears, or changes to other localities from time to time, therefore there is nothing characteristic in the appearance of the parts.

Diagnosis.—The affection is liable to be mistaken for neuralgia, for enlarged glands at the base of the tongue, for enlarged veins, for chronic follicular tonsillitis or glossitis, for syphilitic or tubercular sore throat, for tobacco sore throat, or for cancer. The essential points in the diagnosis are the uncomfortable sensations of pain, which change usually with the changes in the weather, a rheumatic diathesis, and the absence of any distinct physical signs.

From varicose veins, enlarged glands at the base of the tongue, and from follicular tonsillitis or glossitis,

[1] Read before the Chicago Medical Society, February 17, 1890.

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all of which sometimes present similar symptoms, this disease is to be diagnosed by a careful inspection of the part, by the course of the disease, and by the results of treatment. By inspection we may at once ascertain whether the veins or the glands at the base of the tongue are enlarged; but, unfortunately, we cannot tell whether enlargement of the glands or a varicose condition of the veins is the cause of the patient's symptoms. Some patients have these conditions and yet suffer no inconvenience whatever, while in others they give rise to serious discomfort. Therefore, if we find varicose veins or enlarged glands at the base of the tongue, with evidence of what seems rheumatic pain in this locality, we will have to remove these conditions before we can exclude them as the cause of the patient's discomfort. If the patient has a rheumatic diathesis, which can be ascertained by inquiry, it is a point in favor of the diagnosis of rheumatic sore throat.

In follicular tonsillitis and glossitis the signs, upon inspection, are characteristic, and we may usually take it for granted that the symptoms of which the patient complains come from these diseases. We might possibly be mistaken in cases of this sort, but the results of treatment would clear up the diagnosis. Sometimes the diagnosis is extremely difficult, but in the majority of cases, having inquired carefully into the history and excluded the affections I have spoken of, we may make an accurate diagnosis.

From syphilis this affection may be distinguished by the history and physical signs. In the early stage of syphilis and in the secondary and tertiary attacks of the disease there are in nearly every case physical signs which are characteristic, which signs never occur in the disease under consideration. There are occasional instances of syphilitic sore throat where the signs are not characteristic, but in these I have never known the patient to complain of the persistent pain or discomfort which characterizes the rheumatic affection, and I have seen no reason for confounding the two diseases.

From tuberculosis we may distinguish this by the absence of the constitutional symptoms in the rheumatic affection and their great prominence in the tubercular disease; the moderate pain or discomfort in the rheumatic affection and the severe pain in the tubercular disease; by the absence of ulceration in the former, while in the latter we find superficial ulcerations, which in many cases extend over a considerable part of the region in which the patient complains of pain, while in occasional instances there is deep ulceration.

From tobacco sore throat it may be distinguished by the history, and by the absence of plaques that appear as if the surface had been brushed over with nitrate of silver. However, there are cases of tobacco sore throat in which we find no physical signs, but in these the patient usually complains of a burning sensation in the part that is relieved soon after the tobacco is discontinued. If we find that the patient is an habitual user of tobacco, and stopping its use improves his symptoms at once, and if there are no symptoms of rheumatism in other parts of the body, there will be no difficulty about the diagnosis.

From neuralgia it is often difficult to distinguish the rheumatic sore throat. The presence of slight congestion or swelling is of considerable value in the diagnosis, for in neuralgia there are not likely to be any of these local signs. In most cases of rheumatic sore throat pressure increases the pain, while in neuralgia it does not increase it, but may relieve it. In rheumatic sore throat changes of the weather from fair or clear to cloudy and damp almost always aggravate the symptoms, while in neuralgia they have but little effect. In neuralgia of the throat it is common for the patients to complain of pain in the latter part of the day when they begin to get tired, or after any exertion which makes them fatigued. In rheumatic sore throat the pain may be worse in the morning, and is not particularly increased by fatigue.

From cancer we distinguish it by the physical signs. In all cases of cancer which I have met there have been early and distinct physical changes, with more or less induration, gradually increasing irregular swelling, and finally deep ulceration. These changes do not occur in rheumatic sore throat. In cancer of the throat the patients are not likely to experience pain long before some of these physical alterations occur. In the rheumatic trouble pain is the essential symptom, and the physical changes are not marked.

Prognosis.—Unless relieved by treatment we may expect these cases to continue for several months, or even years, but there is no danger so far as life is concerned.

Treatment.—In treating these cases our first attention should be directed to prophylaxis. With this in view we must be careful that the patient is well clothed and housed, and that he is not exposed to undue changes of temperature or to wet or damp atmosphere. Rheumatic patients should always wear either wool or silk next to the body throughout the whole year, light in summer and heavy in winter, and it should be worn both night and day. They should be careful that all the excretory organs of the body perform their functions properly. They should eat sparingly of such albuminous substances as meat or eggs, and should live largely on vegetables or fruit. The vegetable acids are often advantageous. Whatever is eaten it is especially important that digestion be perfectly performed so that the system be not poisoned by the formation of ptomaines.

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For the local treatment of the disease sedative or stimulant applications may be made with almost equal chances of relief. Applications of the tincture of aconite to the painful spot four or five times a day will sometimes give considerable relief. I have frequently found relief from the application of stimulants, as, for example, solutions of sulphate of zinc. The application of morphine in solution or in powder is sometimes a source of much comfort to the patient. I have derived more benefit, I think, from the application of a spray composed of morphine, carbolic acid and tannic acid, in glycerin and water, than from anything else. This solution consists of 4 grains of morphine, 30 grains each of carbolic and tannic acids, and 4 drachms each of glycerin and water. I apply it in full strength, and frequently give it to the patient in a solution of half this strength, to be used daily in the form of spray. In some cases the strong tincture of iodine gives relief; in others the application of a 60 grain solution of nitrate of silver has proved beneficial. These applications do good on the same principle that blisters sometimes relieve a rheumatic joint. The most important part of the treatment is the internal medication. For this purpose salol, the salicylate of sodium, iodide of potassium, guaiac, phytolacca, and the oil of gaultheria may, one or all, be used at different times with benefit. The salicylate of sodium in doses of 7½ to 10 grains four or five time a day; the oil of gaultheria in doses of 15 minims three or four times a day; the ammoniated tincture of guaiac in doses of a teaspoonful three or four times a day, or the resin of guaiac in lozenges, frequently repeated, are of considerable value. But I have derived the most benefit from the extract of phytolacca and salol, combined with a laxative, and sometimes with the iodide of potassium, or with the bromide of potassium for its sedative effects. I give the extract of phytolacca in doses of from 2 to 4 grains, and salol in the same dose, or sometimes in doses of 10 grains. Tincture of bryonia and of cimicifuga have been claimed to be valuable remedies in the treatment of rheumatism. I have used them both, apparently with slight benefit in some instances, but the obstinate cases have done better under the phytolacca and salol, with the occasional use of the other remedies already suggested.

I have records of over fifty well-marked cases of this disease observed during the past four or five years, from which I deduced what I have said in this paper regarding the symptomatology, prognosis, and treatment.

70 STATE STREET.

The Astor Bequests to Charities.—By the will of the late John Jacob Astor two hospitals in New York City are benefited to the extent of $100,000 each; namely, the St. Luke's Society and the new Cancer Hospital.

DRAINAGE IN ABDOMINAL AND PELVIC SURGERY.[1]

BY JOSEPH PRICE, M.D.,
OF PHILADELPHIA.

THE absolute necessity of drainage in abdominal surgery has led to a careful estimate of its value in all surgery. Wherever there is serous effusion or leakage of any kind in the line of incision or in the cavity caused by the removal of any neoplasm, the cicatrization of the wound is interfered with, either by the nature of the fluid, or by the mechanical pressure exerted by that fluid under tension. In the pelvis the presence of fluid as a pathological accumulation at the seat of removal, involves a nidus of remaining unhealthy tissue, where physiological or healthy digestion is impossible. Illustrative of this fact I have the following specimens: In the first there is a pyosalpinx with an appendicitis and cœcal ulcer. The cœcal ulcer necessitated the stitching of the bowel, while the appendix stump was inverted and closed peritoneally. The pus-tube was universally adherent, and in its enucleation débris of unhealthy tissue was necessarily left to a greater or less extent. The value of drainage is here apparent. In the second case, the condition was analogous, save that there were present double pus tubes with an ovarian abscess.

The third specimen is that of an extra-uterine pregnancy, with rupture, recurring hæmorrhages, and general peritonitis. The abdomen was full of blood. In a fourth specimen there is a small adherent cyst, with a pus tube on the opposite side.

This group of cases was operated on in the last ten days, and all the patients were suffering from extreme exhaustion, from loss of blood, and the presence of pus. In all these cases the trouble is universally of long standing, where all imaginable complications existed. Foremost among these complications were the bowel adhesions. In one week I was compelled to stitch the intestine five times. In this connection the care required in dealing with diseased serous surfaces claims especial attention. Not only must the primary lesion of the intestine be intelligently dealt with, but the secondary disease incident to its pathological adhesions, and the ragged remains incident to its separation must also receive extreme attention. In no way can they be rendered inoffensive, save by drainage. In speaking of remaining débris, it may be well to insist upon a distinction between a remainder that is absolutely unavoidable, and that which occurs through timidity, inexperience, ar gross carelessness. Such remainders as these are nothing less than criminal. When I find them or hear of them, I know one of two or three things has caused them. When I hear of a

[1] Read before the Philadelphia County Medical Society, February 2, 1890.

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patient being operated upon by the same man two or three times, I estimate the operator's ability or conscience accordingly. All the antiseptics, whether in bottles or consciences, will not make careless surgery give good results, or free the patient from the dangers of repeated operations. In four cases which have lately come under my notice, three of the patients died of operations repeated not less than three times. Flesh and blood will stand about this much. If the tension is too great, the harp-string will strain and snap, be it saint or sinner that plays on it. Necessary remainders are those produced by adhesions, in parts not removable, save at a risk greater than is involved by leaving them. Such remainders as these should be trimmed to the utmost. If they are on the bowel, and their presence threatens too much the welfare of the patient, intestinal anastomosis or bowel resection may be resorted to.

Mechanical treatment of all bleeding points need not here be discussed. After all major leakage has been controlled, the hot drenching of the abdominal or pelvic cavity must be resorted to, for the removal of débris, shreds, and clots. After this, even sponge or lint packing may be found necessary. The insertion of the drainage tube down to the lowest involved locality must then be made. Care must be taken that the tube makes no injurious pressure upon either the diseased or healthy portion of the intestine. In either case it will be fatal to uninterrupted recovery, and is likely to produce fistula. The use of large drainage tubes either in abdominal or general surgery is to be deprecated as unnecessarily impeding healing and encouraging suppuration. A small tube, with a calibre sufficient to insure its not being obstructed by escaping fluids, when somewhat viscid, is all that is called for.

The failure of the earlier operators to appreciate the cause of death in their more complex cases, was, at the bottom, really the cause of that critical period of ovariotomy when the congestive chills of dread made surgeons tremble and hesitate at deciding for or against the operation. In the earlier post-mortems of patients operated upon, the pelvis was found full of serum and clots. Had the fear of this abdominal sanctuary not been by tradition so dreadful, that it was thought more rash to open it to a drainage tube than to close it to gallons of fluid and pounds of clot, the tale would have been different and cavilers sooner silenced.

Purulent cases, where a nidus of infection could not by any means be primarily removed, would have yielded to drainage, while they died of turpentine and poultices, that made the abdomen warm, to hasten the infection. The same is true of all inflammatory products arising from any source whatever. This is a point well illustrated by two cases of puerperal peritonitis I lately operated upon. They had puerperal fever of five weeks' standing, with high temperature and general collapse, and were full of pus to the umbilicus. There were huge ovarian abscesses, with bowel adhesions. The tubes and ovaries were removed and the bowel carefully stitched. The abdominal cavities were flooded with hot water twice, which did more to bring up the pulse than anything else. The result is typical—complete recovery without bad symptoms.

It must be insisted upon that the mortality of this work would be so great without drainage that the cases would have to be left to their fate by the surgeon in simple self-defence. Operators who will not recognize this as proven beyond doubt, will still go on having mortalities that they cannot explain. Their cases, while not worse than others, will suffer by comparison, and their bad results be apologized for.

While operation in all these cases is to be insisted upon, we will constantly see others where typical surgery is impossible; the patients are too far gone to allow prolonged operation. In such cases the immediate cause of the dangerous condition, if pus, is to be eliminated by drenching and drainage, and after the patient has rallied, some days later, the operation may be completed. Too much surgery in extremely debilitated patients will kill just as surely as none at all, as I have long since insisted upon and practised with gratifying results.

OPERATIVE METHODS AS ILLUSTRATED BY THE HISTORY OF OVARIOTOMY IN AMERICA.[1]

BY LEWIS S. McMURTRY, M.D.,
OF LOUISVILLE, KY.

THE history of ovariotomy is the history of abdominal surgery. For many years after the establishment of this operation abdominal surgery was limited to the removal of ovarian tumors. The knowledge and experience gained thereby led to other procedures, until the present proud position of peritoneal surgery was attained. Beginning in America in 1809, it has been persistently and zealously cultivated by American surgeons up to the present time. A retrospect of the origin, early history, struggles, and triumphs of this heroic branch of surgery is replete with instruction. That its pioneers were subjected to criticism and abuse, leading oft-times to professional ostracism; that they were treated with incredulity, and charged with legalized murder; and throughout all this misrepresentation and persecution that they pursued the stern line of duty, are circumstances which make this the most thrilling chapter in the history of American surgery.

[1] Read, by invitation, before the Philadelphia County Medical Society February 25, 1890.

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It is the purpose of this paper to deal with methods rather than men, and to endeavor to deduce from the record some lessons bearing upon the practice of the present time.

In December, 1809, Dr. Ephraim McDowell, at his home in Danville, Kentucky, performed the first ovariotomy. The writer of this sketch was born and reared near this town, educated there, and resided there until recently. Having known since my boyhood the immediate family and former patients of Dr. McDowell, I have had exceptional opportunities to inform myself as to the operator and his work. In 1793 and 1794 McDowell was a student of medicine in Edinburgh, where he was a pupil of John Bell. From this eminent teacher he learned the nature of ovarian tumors, and was informed of the perils which would be attached to any attempt at their removal. He knew that no surgeon, however great his skill, had ever attempted such a bold and perilous procedure. Fifteen years after his return to America, and after attaining wide-spread celebrity as a surgeon, especially as a lithotomist, he performed his first ovariotomy. The operation, of course, was executed without an anæsthetic. The incision was made to the left of the median line, about three inches external to the border of the rectus muscle, and was nine inches in length. After opening the peritoneum he first tied the pedicle with a strong ligature, and then cut open the tumor and removed its contents. He then divided the pedicle and removed the sac. As soon as the incision was made into the abdomen, he states, the intestines rushed out upon the table, and were not replaced until the operation was completed, which, he adds, occupied twenty-five minutes. He then turned the patient upon the left side to allow all fluids to escape. He closed the incision with interrupted sutures, and brought out the ligature attached to the pedicle at the lower angle of the wound. Adhesive strips and a bandage completed the dressing; the patient was put to bed, and he prescribed "a strict observance of the antiphlogistic regimen." At the end of twenty-five days the patient returned home in good health.

The special features of McDowell's technique worthy of note are: (1) The incision was made through the muscular layers of the abdominal wall three inches external to the rectus muscle. (2) The cyst was not evacuated until after the pedicle was lighted. (3) An effort was made to cleanse the peritoneum of fluids. (4) Drainage was sought by bringing the ligatures out at the lower angle of the wound. (5) The operation occupied only twenty-five minutes, expedition being more hastened, doubtless, by the absence of an anæsthetic than otherwise.

McDowell operated thirteen times, with the result of eight recoveries and five deaths. In his report of his second case he uses the expression: "I laid her side open," as in the former case. In his third case he adopted the median incision, saying in his report of this case: "I changed my place of opening to the linea alba."

Dr. McDowell was a man of splendid presence and aristocratic bearing. He was quite a "dressy" man, neat in his appearance and cleanly in his person and habits. That McDowell appreciated the responsibility he had incurred, and was aware that he was establishing a great operation, destined to add lustre to the science and art of surgery, is apparent in the following extract from his reply to a Dr. Henderson, who had criticised McDowell's report for its want of "particular detail." Replying through the columns of the *Eclectic Repertory and Analytical Review*, of Philadelphia, McDowell says:

> "I thought my statement sufficiently explicit to warrant any surgeon's performing the operation when necessary, without hazarding the odium of making an experiment, and I think my description of the mode of operating, and of the anatomy of the parts concerned, clear enough to enable any good anatomist, possessing the judgment requisite for a surgeon, to operate with safety. I hope no operator of any other description may ever attempt it. It is my most ardent wish that this operation may remain to the mechanical surgeon forever incomprehensible."

This quotation stamps McDowell as a surgeon of broad and elevated views, fully aware that he had opened a new and rich domain in surgery.

McDowell first operated in 1809, and in July, 1821, Dr. Nathan Smith, Professor of Surgery in Yale College, performed ovariotomy at Norwich, Connecticut. Dr. Smith had never heard of McDowell's work, and operated in an entirely original way. The incision was made in the median line, and was three inches in length. He states that he waited until the blood ceased flowing before he opened the peritoneum. The omentum being adherent, he tied it away with ligatures made from a kid glove. The pedicle was also tied with the same material, the ligatures cut short, the pedicle dropped, and the incision closed. The patient made an uninterrupted recovery, and sat up and walked at the end of three weeks. Dr. Smith undertook another operation for ovarian tumor, but desisted on account of adhesions, and closed the incision. The patient recovered from the operation. Notable features of his technique were: (1) the short incision; (2) protection of the peritoneum from the blood of the incision; (3) ligature of omental adhesions; (4) ligature of pedicle, ligature cut short, and pedicle dropped; (5) animal ligatures.

Dr. Alban G. Smith, of Danville, Ky., was the third to perform ovariotomy. He assisted McDowell in several of his operations, and operated on May 23, 1823. He reported the operation in the *North*

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American Medical and Surgical Journal, January, 1826. He followed McDowell's method in operating, and brought the ligature out through the lower angle of the wound. His patient recovered. That surgical opinion and practice often travel in a circle is aptly illustrated by the fact that he administered a decoction of senna to the patient the night after the operation, producing free evacuations the next day, and several the day after. Peaslee mentions this to illustrate the crude methods of early days. We all know now that such medication is based on sound principles, and Dr. Alban G. Smith would, if living, find himself thoroughly *en rapport* with the most advanced methods of the day.

McDowell died in 1830. Nathan Smith did not press his work further after his second operation, which was only an exploratory incision. From this period until 1843 the operation lapsed into obscurity, and was practically abandoned by the profession. A few brave surgeons would occasionally attempt it only to abandon their purpose when adhesions were encountered. Among these were Trowbridge, of New York; Mussey, of Dartmouth; and a few others. In 1829, Rogers, of New York, operated successfully, adopting the method of treating the pedicle which Nathan Smith had practised. Billinger, of Charleston, S. C., operated successfully in 1835, tying the pedicle with animal ligatures, cut short, and pedicle dropped, after Nathan Smith's method. From 1835 until 1843 there were absolutely no cases of ovariotomy in this country. In the latter year, Dr. John L. Atlee, of Lancaster, Pa., and Dr. Alexander Dunlap, of Springfield, Ohio, began their work, joined by Dr. Washington L. Atlee, of Philadelphia, the following year, and revived the operation in America.

In England, Charles Clay did his first operation in 1842. Mr. Spencer Wells began to operate in 1858. The status of the operation in Great Britain at the time the Atlees and Dunlap began their work may be inferred from the fact that the first successful ovariotomy in a London hospital occurred in 1846, Mr. Cæsar Hawkins being the operator, three years after the revival of the operation by the Atlees and Dunlap. J. Taylor Bradford, of Kentucky, entered upon his series of thirty operations, with twenty-seven recoveries, in 1853; and Gilman Kimball, of Lowell, Mass., joined his colleagues in the great work in 1855. Peaslee states that the operation did not secure a permanent footing in the United States until 1855, and then only in the country. The surgeons of the cities, as a rule, opposed it for some years afterward. Ten years later, 1865, the operation was generally accepted. Operative surgery received a great impetus in the discovery of anæsthesia.

No one can read Dr. John L. Atlee's report of his first case, which was the first double ovariotomy ever performed, without recognizing the courage, skill, and sagacity of a master in surgery. He operated with rapidity; he carefully arrested all bleeding; he cleansed the peritoneum, and used silk ligatures. He transfixed the pedicle with a double silk ligature, and tied each half with half the ligature. He adopted McDowell's method, and brought the ligatures out through the lower extremity of the wound to secure drainage. Dr. Washington L. Atlee performed his first operation in March, 1844. It was unsuccessful. His next was done five years later, and was successful. He adopted the methods of his brother in operating. Dunlap treated the pedicle after McDowell's method. Dr. E. R. Peaslee began his series of ovariotomies in 1850, and Sims, Thomas, and Emmet, a few years afterward, joined in the work. In October, 1871, Peaslee had collected 739 ovariotomies performed in this country, with successful results amounting to about sixty-eight per cent.

In 1858 Mr. Jonathan Hutchinson, of London, performed two ovariotomies, and devised the clamp for fixing the pedicle externally. This method was adopted and modified by W. L. Atlee, who led all American operators of his day in the number of his cases. The clamp came into general use, and had the confidence of ovariotomists generally until a recent period. For many years the method of securing the pedicle was considered the pivotal point in the operative technique, and the ingenuity of operators was expended on this feature of the opetion. Under the leadership of Spencer Wells in England and Atlee in the United States, the clamp superseded other methods.

The causes of death after ovariotomy were enumerated at this same period (1873), by Peaslee, as follows, his deductions being based upon post-mortem examination of fifty cases. The causes are given in the order of frequency: Peritonitis, septicæmia, shock, exhaustion, hæmorrhage, strangulation of intestine, diarrhœa, erysipelas, tetanus, and ulceration through the bladder. Based upon this view of the pathology, peritonitis was regarded as the greatest danger to which a patient was subjected after ovariotomy, and opium in heroic and repeated doses, in accordance with the accepted therapeutics of that day, was the conspicuous feature of the after-treatment. This treatment was universally accepted by the profession. The turning-point in the history of ovariotomy in America dates from the correction of this error in pathology. When it became known that the greatest peril of a patient during and after ovariotomy is septicæmia; and that the peritonitis hitherto attributed to traumatism was in reality due to septic infection, this department of surgery entered upon an advance which in grandeur and brilliancy has no

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parallel in the history of our art. This great fact was heralded in America by Marion Sims and met with universal acceptation. Sims instituted a method of drainage after ovariotomy by puncturing Douglas's cul-de-sac and passing a tube into the vagina. This was soon abandoned, though it is now practised by Martin, of Berlin.

With the acceptance of the fact that the supreme danger after ovariotomy is in septic infection, a new era in ovariotomy began in America. Synchronous with the adoption of operative methods and after-treatment based upon this knowledge the clamp was abandoned, and the intra-peritoneal treatment of the pedicle was restored. The most important single contribution made to pelvic and abdominal surgery is the system of surgical cleanliness instituted by Lister. Burdened with the spray, pads, macintosh, and chemical solutions at first, it has been simplified and stripped of its dangers and its burdens, and found to consist, in its essence, of absolute cleanliness. With the application of this principle—the outgrowth in practical surgery of the researches of Pasteur, Lister, Koch, Watson-Cheyne, and others upon the nature of fermentation, putrefaction, suppuration, and septic infection—results have been obtained of which our predecessors scarcely dreamed. From ovariotomy the work extended to other organs within the peritoneal envelope, until all have been included.

When Marion Sims, a few years ago, confidently predicted that the time was near at hand when gunshot wounds of the abdomen would be treated by abdominal section and suture of the wounded viscera, it was considered by many as the dream of an erratic man of genius. Already a number of successful cases have been recorded in America. Ovariotomy has within a few years grown from an operation with desperate mortality to be the most successful major operation in surgery. From a last resort, attempted by only a few bold spirits in the profession, it is now done habitually by surgeons in every State of the Union. Along with the extension of surgical treatment to the other organs invested by the peritoneum has come a greater perfection in operating, so that the work of the best operators has a perfection and finish approaching the ideal in surgical art.

Time will not permit even an enumeration of the additions contributed in America to modern ovariotomy and the valuable contributions to the surgery of the intestines and other abdominal organs, all of which is the out-growth of the work inaugurated by McDowell.

In conclusion I will venture to direct attention to one important lesson to be deduced from the study of the history of ovariotomy in the country of its birth. We have seen from what has preceded that the operation grew to its grand proportions in the hands of a few. All who have labored in this field of surgery realize how difficult is diagnosis even with experience; how exacting the technique; how varied the work in cases apparently similar; and how fatal an error. Of all departments of surgical practice none requires such rigid and prolonged apprenticeship for successful results. No surgeon can rely upon simple cases. What is most needed to maintain the high standard fixed for abdominal surgery by its founders and its eminent practitioners is men in every community especially trained and equipped for this special work.

SULPHONAL IN CHOREA.

BY JOHN A. JEFFRIES, M.D.,
OF BOSTON.

THE treatment of chorea has proved to be such a stumbling-block in the way of physicians that it is only with reluctance that the writer has ventured to bring the use of sulphonal in such cases into notice. It may be that my results are purely accidental; that they are purely imaginary on my part does not seem possible, as the results have, in several cases, been determined by other physicians, and have satisfied the patients.

Sulphonal has recently been advised in various forms of muscular spasm, but not, so far as I know, in chorea; yet, judging from my experience, the drug is able, at times, to suppress promptly the choreic motions.

The cases reported are taken from my service at the Boston City Dispensary, with the exception of two treated by me in the service of Dr. Knapp, at the Hospital. A good many others have been treated with about the same results, but time and expense have prevented any large series of cases.

It will be seen that only five of the cases were simple chorea—that is, first attacks of recent origin. These all recovered within three weeks. In two arsenic had failed, in two was never used; in the fifth either arsenic or sulphonal alone failed, but together they were quickly followed by improvement. The other five cases were either of long standing, or second or third attacks; four were at the period of puberty; three of these cases got well at least for a month; in three arsenic had failed, in two was not used. Two have not recovered with any treatment.

To me it seems clear that the sulphonal acted favorably, and that improvement was not simply due to change in the disease, or to arsenic previously given. Nevertheless, I hold that sulphonal is only indicated as an adjuvant to arsenic. On sulphonal alone the patients were apt to grow pale, and clearly showed the need of a tonic. This want arsenic supplies, and, at the same time, directly affects many

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cases of chorea. How sulphonal acts I do not know; it was given in the first case to counteract the psychical symptoms, and with a hope of affecting the motions.

CASE I.—Well grown, thirteen-year-old girl, with nothing of note aside from the chorea, but loss of one eye from "the use of eye drops." Claims to have been frightened five years ago, since when has had chorea; much worse in the summer than during the winter. No history of painful or swollen joints. Face, tongue, eye, vocal cords, body, arms, and legs all markedly affected. Motions sharp, extensive and continuous. Has lately suddenly passed water twice. Knee-jerk, heart and lungs normal; bowels regular, vision, o. d. $\frac{5}{IV}$. Mind distinctly affected. Fowler's solution prescribed, July 28, 1888.

August 18. Much improved as to chorea, but has an extensive arsenic eruption on face and body. Stopped Fowler's solution and gave sulphonal, 2 grains three times daily.

25th. Marked improvement, mother thinks that the "second medicine is the best." Dose increased to 5 grains.

Sept. 6. No choreic motion since August 27th. Stopped sulphonal.

15th. Chorea has just re-appeared, as a trace, in tongue and fingers. Vertigo. Sulphonal, 5 grains night and morning.

18th. Possible trace of chorea in fingers.

27th. Well as regards chorea, but slightly anæmic. As this case was found to be amply able to pay it was discharged, and no further record can be given.

CASE II.—Boy ten years old. (August 27, 1888.) Has had chorea each of the last two summers. The first attack was attributed to fright. No history of pain or swelling in joints. Heart normal. Boy very cross and excitable, face and right arm distinctly affected.

Sept. 17. Has used no medicine. Much worse. Speech affected. Ordered Fowler's solution, 5 minims three times daily.

20th. No better; eyelids swollen and stomach irritable. Stopped arsenic and gave sulphonal, 2 grains, morning and noon.

24th. Has improved in every respect; "trembles the least bit."

29th. Worse again; stopped sulphonal. In the course of a month patient ceased to attend. Still had slight chorea.

Here sulphonal certainly appeared to do good at first, but was not continued long enough. The boy belonged to the dirty, shiftless class.

CASE III.—Girl, nine years old. (May 1, 1889.) Three weeks ago had some slight febrile symptoms, pain in the knees, and chorea began at same time. Now has pronounced chorea of all the voluntary muscles, with night attacks. Heart normal. Gave Fowler's solution, 3 minims three times daily.

May 6. No better; changed to sulphonal, 2 grains, three times daily.

8th. Much better; can talk; arms steady, feet nearly so; feels sleepy.

15th. Well, though constipated. Stopped sulphonal, gave cascara sagrada.

29th. No relapse; bowels regular.

CASE IV.—Girl, fifteen years old. (May 24, 1889.) Similar trouble two years ago; no cause found. Disease has lasted six weeks and is growing steadily worse. Now has chorea of arms and face; motions very sudden and sharp, of the kind often erroneously called electric. Has been treated with Fowler's solution, iron, and antipyrin. Gave sulphonal, 5 grains, three times daily.

May 31. Watched her for some time and saw no twitching. Medicine stopped. About four weeks later the trouble began again, but the further history is not known.

CASE V.—Girl, twelve years old. (June 1, 1889.) Two years ago began to shake and one eye became affected. No cause found. Internal squint; left external rectus weak; pupils react to light and accommodation. Heart and lungs normal; bowels regular; no difficulty with urination; marked chorea of left arm and left leg; knee-jerk absent; no atrophy, paresis, contracture, paræsthesia or anæsthesia. Gave sulphonal, 3 grains, three times daily.

June 6. Very slight improvement. Gave up sulphonal. With eyeglasses and Fowler's solution the patient improved until September 16th. She then returned with her glasses broken and general chorea.

Jan. 1, 1890. Still no better, in spite of glasses.

CASE VI.—Boy, four and a half years old. (June 5, 1889.) First attack. Had measles when six months old. Is the ninth of ten children, three of whom died of heart trouble following chorea. Father has chronic articular rheumatism. Disease began two weeks ago in the hands; now face, neck, speech, eyes, legs, bowels, and bladder are affected. Last night, for the first time, motion was noticed during sleep. Cross and restless; heart normal; has made no complaint of pain. Sulphonal, 3 grains, three times daily.

June 7. Better; sleeps well; added tinct. ferr. chlor., 3 minims, three times daily.

21st. Much better.

July 7. Slight if any motion. Has had no medicine for a week; iron alone given.

August 26. Is said to have slight motion if much excited. Has otorrhœa.

CASE VI.—Boy, fifteen years old. (June 26, 1889.) No family or personal history indicating the cause of his disease. Had chorea when three and again when thirteen years old. Pale; heart normal; chorea of hands, tongue, and throat. Sulphonal, 6 grains, three times daily.

July 1. No signs of chorea to-day.

5th. No signs of chorea, but has a slight tremor of voice if excited. Giddy. Stopped sulphonal, and gave Fowler's solution, 3 minims three times daily.

16th. Voice the same; otherwise well.

24th. Perfectly well.

CASE VIII.—Girl, twelve years old (June 25, 1889). First attack; no pains. Heart normal. Motion of arms, legs, face, and tongue. Gave sulphonal, 5 grains three times daily.

July 1. No better; changed to Fowler's solution, 5 minims three times daily.

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5th. Has been vomiting. Chorea no better. Reduced Fowler's solution to 2½ minims, and added sulphonal 3 grains three times daily.

8th. Is quieter, and has had no more vomiting.

12th. Quieter; face swollen from a diseased tooth.

19th. Chorea worse; she twitches during sleep. Increased Fowler's solution to 5 minims, and gave potassium bromide 12 grains in place of sulphonal.

22d. Better, but the bromide has not improved sleep.

August 2. Worse. Fowler's solution in 7 minim doses; sulphonal, 2 grains.

7th. Same condition.

15th. Better; eyes began to swell, arsenic stopped. Sulphonal, 10 grains daily.

28th. Has been in the country one week. No traces of chorea.

Nov. 5, 1889. Since going to school relapsed for two weeks.

CASE IX. Girl five years old. (July 5, 1889.) First attack began seven weeks ago. Chorea of the entire body. Heart, bowels, bladder, and knee-jerk normal. Fowler's solution and sulphonal, 3 grains of each three times daily.

July 9. Chorea better, but has had much epistaxis and pain in the bowels. Stopped Fowler's solution.

17th. Chorea much better, no epistaxis, color not so good. Added iron to treatment.

August 2. Has had no medicine for five days and has been quiet for ten days.

26th. The patient came back from the country with some chorea. She steadily grew worse in spite of Fowler's solution and sulphonal until on September 7th she had a chill, epistaxis and great increase of chorea. The same occurred on both the following days in spite of quinine. On the afternoon of the 12th I made a microscopical examination of the blood and found numerous plasmodia malariæ. No enlargement of the spleen could be detected. Quinine was then given in very large doses, and no more chills occurred. Treatment since has been Fowler's solution in small doses, and now, October 24th, the child is a picture of health.[1]

CASE X.—Girl, eighteen years old. (July 7, 1889.) Chorea began after fright two days previously. Motion is confined to arms but is distinct and extensive. Heart normal. Knee-jerks almost abolished. Gave sulphonal, 5 grains, three times daily, and iron.

September 4. Patient returned a few times and has now been at work, and well, for a month.

The above are the first ten cases in which sulphonal was used of which I have records. In one other, in which a mitral murmur existed, endocarditis and fever came on in forty-eight hours, and the case was sent to the hospital. The cases are all called chorea on account of the typical motion and absence of symptoms pointing to other trouble, though I am far from sure that the ten cases are examples of one disease. Just before my term of service ended, I ordered sulphonal in two cases of chorea from imitation with, I understand, no beneficial results.

If sulphonal is found efficient in some of those cases where arsenic fails, or is not well tolerated, my expectations will be filled. In my experience sulphonal has proved more efficient than any other drug excepting arsenic. All my cases were also ordered a daily sponge bath, simple diet, and sleep in the middle of the day.

[1] The child was again taken with severe chorea on December 24th, and developed influenza a few days later. She was sent to the hospital.

THE TREATMENT OF CERTAIN FORMS OF GANGRENE OF THE INTESTINE.[1]

BY CHARLES B. PENROSE, M.D., PH.D.,
SURGEON TO THE GYNECEAN HOSPITAL; OUT-PATIENT SURGEON TO THE PENNSYLVANIA HOSPITAL, PHILADELPHIA.

I PROPOSE to consider briefly here the treatment of the degenerated or gangrenous condition of the intestine which is frequently met with in cases of pelvic or abdominal suppuration. In these cases the intestinal coats are destroyed by direct extension of the inflammation. The condition is common in tubal or pelvic abscess and in the perityphlitic abscess of appendicitis. In such cases we frequently find the abscess cavity walled in by adherent loops of intestine; the intestinal coats being in contact with the purulent accumulation and presenting on their surface one or more cheesy, degenerated spots, of a purple or black color, and from one-half to two inches in diameter. These spots often have in their centres perforations, generally of small calibre, but sufficiently large to permit of escape of pus by the bowel, and often of escape of fæces into the abscess cavity. A similar gangrenous condition of the intestine, with or without perforation, is sometimes present in the pelvic inflammatory troubles of women when the Fallopian tube effects adhesion by its fimbriated end to the sigmoid flexure or rectum, and may discharge its contents through this channel.

Another class of cases in which there is an analogous degenerated condition of intestine, and to which the following remarks with regard to treatment also apply, is found in intestinal obstruction, when the pressure upon the intestinal walls from within produces ulceration beginning in the mucous membrane and often extending through all the coats. Such ulceration has not, in my experience, been accompanied by the same amount of inflammatory infiltration and thickening of the diseased areas as occurs when the destructive process proceeds from without inward.

The condition of the patients in whom disease of this character occurs is generally such that they cannot withstand a prolonged or serious operation.

[1] Read before the Philadelphia County Medical Society, February 26, 1890.

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Excision of the degenerated patches or resection of the intestine is in most cases out of the question. Evacuation of the abscess, removal of the exciting cause, and adjustment of the abdominal contents in positions most favorable for recovery, are the only steps to be considered. I will, therefore, leave all ideal surgical operations out of the discussion, and consider only those cases in which ideal surgery is impracticable. I will not discuss the best methods of removing the diseased portion of intestine, but the safest way in which it can be left in the abdomen. Such a discussion is of value because every surgeon must realize the impossibility of performing an ideal operation in many cases of abdominal surgery. Certain rules, theoretical or deduced from experiments on the healthy intestines of the lower animals, are laid down to be followed in the various abdominal operations on man, often without sufficient consideration of the pathological changes and distortions which may be caused by the disease that demands the operation. The determination of the extent to which one can go toward the ideal operation, without sacrificing any of the patient's chances of life to the surgeon's wish for mechanical perfection, distinguishes the true surgeon from the surgical mechanic. And to attain this end the surgeon must not only be familiar with the ideal operations possible in favorable cases, but also with the recuperative powers, and the best means to favor recuperation of diseased or injured structures in complicated cases where ideal surgery is impossible. In the disease, for instance, which is under consideration, the operator recognizes the danger of immediate, or not very remote, fæcal extravasation if the degenerative patches of intestine are not removed, or if the perforations or fistulous openings are not firmly closed, and yet he realizes that the patient may not withstand the ideal operations necessary for the accomplishment of this object. It is then that a knowledge of how much can be safely left untouched, and the best way of so leaving it, is most desirable.

When diseased intestine, such as we are considering, is left in the abdomen, our object should be:

1. To place it in a position which will tend most to favor its restoration to health.

2. To defer as long as possible the separation of the slough and the escape of fæces—if such an event is inevitable; or if a fistulous opening already exists, to defer the escape of fæces from this opening until preservative adhesions have taken place.

3. To place the intestine in a position most favorable for the spontaneous closure of a fistula, and most accessible for a subsequent operation.

4. To protect the sound peritoneum from infection from the diseased areas.

One of the most important points in the fulfilment of these indications is the adjustment of the diseased portion of intestine in a straight line, with the gangrenous patch facing the belly wall and in the immediate neighborhood of the abdominal incision. The straight position favors the easy passage of fæces past the gangrenous area, and it not only tends to prevent escape of fæces by reducing to a minimum the pressure from within, but it aids more than anything else the spontaneous closure of the fistula should one result. The easiest fistula to close is one situated on the side of a straight intestinal tube; the most difficult is one at the apex of a sharp flexure.

If the gangrenous spots face the abdominal wall the force of gravity will aid not only in preventing or delaying fæcal extravasation, but also in closing the fistulous opening. The value of gravity as an agent in the closure of a fistula is well illustrated by a case reported by Sir Henry Thompson, where an old urinary fistula which opened into the rectum was cured in a few weeks by making the patient pass his water while lying on his face. By placing the diseased portion of intestine near the abdominal incision we make it most accessible for drainage, we avoid the risk of a deep fistula, and we have it in a position easy for subsequent operation.

When fistulous openings exist in these gangrenous patches they are generally of small size; often so small that the escape of fæces and gas takes place only under pressure. In cases originating in pelvic or abdominal suppuration, the destruction of tissues proceeds from the outer to the inner coats of the intestine, and it generally happens that though pus may escape readily from the abscess into the bowel, yet the intestinal contents find a much less free exit on account of a valve-like closure of the opening. Some of these fistulous openings are so small that, existing as they do in the centre of a thickened diseased mass, they cease to be patulous when the intestine is freed from its adhesions, and are often not visible at the time of operation, their presence being proved only by the previous or subsequent history of the case. The firm closure of such fistulæ is impossible without excision of the whole gangrenous area and the coaptation of healthy tissues. None of the intestinal coats around the fistula will hold a suture of any degree of tension. The intestinal peritoneum cannot be dragged over the openings because it is rendered immovable by inflammatory adhesions, and is so friable that all sutures cut through. However, though these fistulæ cannot be firmly closed, yet the escape of fæces from them can be deferred for a considerable time. And this is especially true if the patient has been prepared for laparotomy by a thorough emptying of the intestinal tract. When the fistulous opening cannot be closed by sutures it may be covered by a large omental graft, extending around the intestine and reaching to the mesenteric attachment. Such a procedure

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will delay, often for several days, the escape of fæces, and may result in cure without even the formation of a fistula.

There is a group of cases in which the gangrenous intestine and the fæcal fistula are situated in a position not accessible for operation. This occurs in cases of pelvic suppuration with the history of purulent discharge from the anus. The fistula exists in the rectum, or in the sigmoid, which is often as inaccessible for operation as the rectum on account of adhesion and contraction of the mesocolon. Under such circumstances all operations for closing the fistula are generally out of the question.

It is, however, fortunately situated in a position most favorable for spontaneous cure, being on the side of a straight portion of intestine, more or less immovable, and especially accessible to drainage and irrigation from above and to intestinal drainage and disinfection through the rectum. Indeed, in most cases small rectal fistulæ—if properly treated—in no way interfere with the patient's chances of recovery, even though left unclosed.

To insure the spontaneous cure of fistulæ it is important that there should be no obstruction in the distal portion of the intestine. All obstructing inflammatory tissue and bands of adhesion must be completely removed, and intestine adherent in sharp flexures must be straightened out. We thus obey a most important rule for the closure of all fistulæ, by rendering the natural passage-way the easier one.

Of course, in all cases of gangrene of the intestine drainage is of the greatest importance, especially drainage by means of large straight tubes whenever we fear escape of fæces. Care must be exercised in placing the drainage tubes, that they do not exert any lateral or vertical pressure upon the diseased portion of intestine, as sloughing has occurred from this cause even in healthy structures.

Before concluding I will report briefly three cases of gangrene of the intestine, in which ideal surgical operations were impracticable, and which were cured by treatment such as I have been considering.

CASE I. *Abdominal and pelvic abscess, gangrenous intestine, entero-vaginal fistula.*—C. G., twenty-one years old, had a history of syphilis of two years' duration. Abdominal section was performed for double hydrosalpinx, and at this operation the peritoneum and the intestines were found perfectly normal with the exception of some healthy pelvic adhesions. Eight days subsequently it was necessary to reopen the abdomen on account of symptoms of intestinal obstruction, and because it was discovered that a free discharge of fæces was taking place through the vagina. At the second operation the peritoneum was in the following condition: There was an abscess in the right inguinal region containing several ounces of pus. In immediate contact with this accumulation was a loop of small intestine eighteen inches long. The whole loop was thickened, stiff, and friable. On the convex surface were two black, necrotic patches two inches in diameter. A second collection of pus was found behind the left broad ligament. The sigmoid was in contact with this accumulation, and was firmly adherent to the posterior wall of the vagina. When separated from the vagina the bowel presented on its surface a necrotic patch one and one-half inches in diameter. The fistulous opening through which fæces had escaped into the vagina existed in the centre of this patch as there were no other portions of the intestine adherent to the vagina. The opening, however, was not patulous, and was obscured by the thickened diseased tissues around it.

As the patient was in a condition of collapse, with an almost imperceptible pulse of 160, no radical procedure like resection or excision could be performed. The gangrenous spots were, therefore, left untouched. The small intestine was placed transversely across the abdomen, immediately above the upper angle of the incision. The sigmoid was freed from all adhesions and straightened as much as possible, and the abdomen was drained by means of three tubes through which continued irrigation was conducted. The patient recovered perfectly without at any time having escape of fæces by any but the natural passage. This is especially remarkable because there was left unclosed a fistulous opening which had been large enough to permit the free escape of fæces into the vagina before operation.

CASE II. *Abdominal abscess, gangrenous intestine.*—A. H. had been suffering for several years with pelvic pain, and recently with acute abdominal trouble with great pain, chills, hectic, uncontrollable nausea, diarrhœa, very free discharge of pus and blood by the rectum, and rapidly increasing emaciation. At the time of operation the abdomen was distended and tender, with marked fulness and feeling of resistance, and dulness on percussion over the right side from the groin to above the umbilicus. Temperature 103°, and pulse 130. Median laparotomy was performed and almost a quart of feculent pus was evacuated from an abscess cavity in the right side of the abdomen, which extended from the floor of the pelvis to two inches above the umbilicus, and inward to the median line. At the bottom of this cavity was found a pyosalpinx, which had been the cause of the trouble. Though a large mass of intestine walled in this collection of pus, yet there was but one gangrenous spot discovered. It was on a loop of ileum and was about two inches in diameter. No fistula was detected, though it is probable that a small valvular opening existed in this spot, as there had been a free purulent discharge from the bowel before operation. As the removal of the necrotic patch was impossible without resection, it was covered by a large omental graft. The intestine was placed in a straight line transversely across the abdomen, with the gangrenous portion at the upper angle of the incision; and two glass drainage tubes were introduced, one to drain the healthy peritoneum and the other the site of the purulent accumulation.

Pulse after the operation was 160. On the fourth

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day fæces escaped from the larger tube, viz., the one which drained the right inguinal region. The quantity increased daily until at the end of a week the total discharge of the bowel came through the abdominal incision. After this it gradually decreased, and six weeks after the operation the abdominal wound was firmly closed and all fæces passed *per anum*. The woman is now in good health.

CASE III. *Gonorrhœal pyosalpinx, with a fistulous opening into the rectum.*—A. F. had been suffering with pelvic pain for three years. For several weeks before operation she had been unable to stand erect, and had frequent discharges of small quantities of pus from the anus. After each discharge the pain was temporarily relieved. Abdominal section was performed and two pus tubes were removed. There was no abscess in the pelvis outside of the Fallopian tubes. The right tube was adherent by its fimbriated end, low down on the anterior surface of the rectum. The discharge of pus had taken place at this point. Fæcal odor was perceived after removal of the tubes and irrigation of the pelvis. There was, however, no escape of fæces until the glass drainage tube was introduced, when a small quantity of dry fæces was withdrawn through the tube by a syringe. The woman was unusually large and fat, and the fistula could not be brought into view, and was inaccessible for any attempt at closure. No such attempt was therefore made, reliance being placed altogether on the abdominal drainage tube, and on drainage through a glass tube inserted in the anus. I felt especially confident in leaving the fistula patulous, since the woman had been thoroughly purged for two days prior to the operation; and because it was in a position most favorable for spontaneous closure.

There was no discharge of fæces from the abdominal drainage tube until twenty-four hours after the operation, when the nurse, without direction, administered a turpentine enema, the result of which was intense pain throughout the lower half of the abdomen and the free escape of turpentine and water from the abdominal tube. For four days after this there was a feculent discharge from the abdomen, and on the fifth day a large quantity of flatus escaped through the abdominal tube while the rectal tube was removed for cleansing. The bowels were moved by glycerin enemata on the ninth day, everything coming by the natural passage. The patient was discharged cured four weeks after the operation.

I have reported these cases because they illustrate the pathological condition to which I wish to call attention, and because they show what can be done without resort to the most heroic surgical operations. In conclusion, I will repeat what seem to me to be the most important points in the treatment of such cases:

1. Free purgation of the patient before operation.
2. Complete removal of all obstructing causes below the gangrenous intestine.
3. The adjustment of the gangrenous intestine in a straight line.
4. Thorough drainage and irrigation of the peritoneum.

THE LEGAL ASPECTS OF VIVISECTION.

BY JAMES M. BECK,
OF THE PHILADELPHIA BAR.

THE recent case of Commonwealth *vs.* Benjamin T. Shimwell, M.D., who was charged with cruelty to animals in vivisecting a dog for scientific purposes, is interesting, not only because it is believed to be the first case of its kind on either side of the Atlantic, but also as it illustrates the legal position taken by the Society for the Prevention of Cruelty to Animals with reference to vivisection. It may, therefore, serve as an apology for a short article upon the legal aspects of vivisection, although the writer must first disclaim any intention to discuss its propriety as a subject for legislation. The theme must simply be the application of the English common law, and of the general statutes prohibiting cruelty to animals, to vivisection.

Dr. Shimwell was arrested under the Act of March 29, 1869, which provides that if "any person wantonly or cruelly ill-treats, overloads, beats, or otherwise abuses any animal, whether belonging to himself or otherwise, shall be deemed guilty of a misdemeanor." The facts adduced at the hearing showed that in order to demonstrate to a class of students in the Medico-Chirurgical College of Philadelphia the value of Dr. Senn's new method of intestinal resection, and of some original and improved methods of performing it, Dr. Shimwell, after thoroughly etherizing a dog, operated upon it and kept it alive for a number of days, in order to note the success or failure of the experiment. It was not disputed that, so far as the operation permitted, the same care was taken with the dog as with a human being, to spare it unnecessary pain and to save its life.

The Society, at whose instance the prosecution was commenced, did not dispute that if the operation had never been attempted, or its success demonstrated, the use of the animal in the interest of science was not cruelty under the Act quoted. Its contention, in the language of one of the witnesses (Dr. Wistar), was that "if the operation had been performed upon inferior animals, and demonstrated as being a possible operation from which they will recover, then the necessity for vivisection ceases." The Doctor did not think, on cross-examination, that vivisection was justifiable for the purpose either of class demonstration or to gain dexterity. In his judgment, the cadaver served the purpose equally well, and, when the witness was asked when research ceased to be original, he thought that if any physician of reputation published the success of a novel surgical operation, the profession was not only justified in accepting the theory, but was precluded from testing its merits by vivisectional experiments. This was the position assumed by the learned Doctor

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and the attorney for the S. P. C. A. Of its scientific correctness the profession must judge. The writer will only discuss its legal merits.

We must first resort to that unwritten body of usages which forms the foundation of our law in England and America, known as the common law. It gave man an absolute and unlimited control over his personal property. It and the Mosaic law declared with equal emphasis that man had, by the gift of the Creator, "dominion over the fish of the sea and over the fowl of the air, and over every living thing that moveth upon the earth."

While any one who maimed an animal belonging to another could be indicted at common law for *malicious mischief*, the gravamen of the charge was the invasion of the owner's right of property, and not the cruelty to the animal, for the animal having no rights at law, none could be invaded. Therefore, as a man could cut down his own tree, at such time and in such manner as it pleased him, without reference to his motive or wisdom in so doing, so he could maim or kill his animal for any purpose whatever. Like the good man of the house, he would say: "Can I not do as I will with mine own?" Therefore, the slaughter of animals for food, for clothing, for sport, or for any other purpose, was recognized and upheld.

Then Mr. Bishop, in his very able treatise on criminal law, says: "The common law recognizes as indictable no wrong, and punishes no act of cruelty, which they (the lower animals) may suffer, however wanton and unnecessary." The apparent exceptions to the rule have arisen in which the cruelty was either so public as to amount to a nuisance, or immoral in its tendency. In these cases it is not the brute whose rights are infringed, but the public, whose quiet and well-being are attacked.

In State of New Jersey *vs.* Beekman (3 Dutcher, 124), the defendant was indicted at common law for wounding a cow, the property of another. It was held, on an elaborate opinion by the Chief Justice, that no such offence existed at common law, and the prisoner was discharged. A number of English cases, stating the same doctrine, are referred to in vol. 2 of East's *Pleas of the Crown*. Indeed, the judges who declared the law, with the wool of sheep upon their backs, and (if we are to believe the great poet) their bellies "with good capon lined," could not well have stated it otherwise.

The importance of this consists in the fact that the anti-vivisectionists, in order to interfere with the rights of property at common law, and the individual's personal liberties, must show an express legislative enactment, and such enactment, being in derogation of the common law, and in this case criminal, will be construed strictly against the prosecution and in favor of the liberty of the subject.

The first English statute "to prevent the cruel and improper treatment of cattle," was passed in 1822, and "punishes any one who wantonly and cruelly beats, abuses, or illtreats any horse, mare . . . . or other cattle." This and the subsequent English statutes are so similar in form and language to the Pennsylvania statute above quoted, that their full recital is unnecessary, except to add that English legislation so fully recognized the inapplicability of them and of the common law to vivisection, that a special statute was in recent years passed, in a temporary aberration of the legislative mind, to prohibit it.

A brief reference to the decisions on these and similar statutes will show that a uniform principle runs through them all. They were not intended to make animals less serviceable to man, nor to abridge his right to beat or kill them for proper purposes. Pain or death inflicted upon the animal is only illegal when cruel, and cruelty has been defined by the Lord Chief Justice of England as meaning "cruelty without reason, cruelty in making one of the lower animals suffer without any reasonable object or to an unreasonable extent." As there must always be, to secure a criminal conviction, a criminal intent, it necessarily follows that when pain or death is inflicted upon an animal, not in a wanton spirit to inflict pain, but in good faith for the benefit of man, there can be no conviction. It may well be that the use designed may not be a useful one, but if the owner in good faith believes it to be, he is protected. It is the wanton or wilful cruelty that is alone punishable. Thus Judge Hoar, in a Massachusetts case, in which a man was arrested for cruelty to a horse, says: "It certainly is not true as an abstract proposition that it is immaterial what may be the motive of a person who inflicts pain upon an animal. Pain inflicted for a lawful purpose and with a justifiable intent, though severe, does not come within the statute meaning of cruelty.

"Thus *a surgical operation*, occasioning the most intense pain, may be justifiable, and is not criminal. To drive a horse at a rate of speed distressing to the brute, *when the object is to save human life*, or to attain any other object of adequate importance, may be lawful." (Commonwealth *vs.* Lupkin, 7 Allen, 579.) In the case of State of New Hampshire *vs.* Avery (44 N. H. 396), where a man was charged with cruelty in beating a horse, and the defence was that the beating was in the course of training, Judge Bellows said: "If it (the alleged cruelty) was resorted to in good faith, and for a proper purpose, it will not be necessarily malicious." In a New York case, where a dog was used in a treadmill, and this was contended to be an improper use, Judge Davis said: "Although a dog is not a beast of burden, yet it is not cruelty to train and subject him to any

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useful purpose. His use in any mode by which his strength and docility may be made serviceable to man is commendable, and not criminal."

A reference to the English cases shows that a similar principle prevails in Great Britain, notwithstanding that Parliament has declared against the practice of vivisection. In the case of Murphy *vs.* Manning (2 Exch. Div., L. R. 307) defendant was arraigned for cutting the combs of cocks in order to fit them for cock-fighting. He was adjudged guilty on the express ground that cock-fighting was illegal, and that therefore the pain was inflicted for an unlawful purpose. Judge Kelly said, in delivering the opinion of the Court: "There are some acts which are cruel (*i. e.*, painful) in the extreme, and no legislation can make them otherwise, yet they are perfectly lawful, and not within the Act because they are done for some lawful purpose. . . . As it (cock-fighting) does not better fit the animal for the use of man, or for any other lawful or proper purpose, it is wholly unjustifiable."

The case of Lewis *vs.* Fermor (18 L. R., Q. B. D. 532) is a strong case against the anti-vivisectionists. In this case certain sows were spayed—that is, the uterus and ovaries were removed, because the flesh of the animal deteriorated in its periods of heat. No anæsthetic was used, and the operation caused pain. The object desired was an increased pecuniary profit, and the end desired was not strictly necessary, as it was admitted that the same end could be attained by killing the animal when not in heat. The defence was that the operation was not wanton, but done in good faith. Said Judge Day: "It seems to me that cruelty means the infliction of grievous pain without a legitimate object, either existing in truth or *honestly believed in.*" Said Judge Wills: "The Act should receive a fair and reasonable construction so as not to bring within the criminal law people who act honestly and without any evil mind or motive. . . . I think there must be something of a moral element of cruelty to bring the case within the section. The question is, whether the act was done for a lawful purpose, and not whether, in point of fact, in the opinion of the tribunal that has had to adjudicate, the practice is a good one. . . . In my opinion, if a person who performs the operation entertains an honest belief that what is done will benefit the animal, he is not liable to be convicted."

The belief may sometimes be erroneous, but we must be careful that we do not try to teach new, though perhaps improved, views on matters within the area of fair scientific discussion, by means of the criminal law. The question has chiefly arisen in a number of cases in which cattle were dishorned. In these cases it appeared that the operation caused intense pain, that it was only practised in certain parts of England and Ireland, and that tipping the horns would accomplish the same result—*i. e.*, the prevention of goring—without the infliction of pain. On the contrary, it was shown that the operation made the animals more docile, and cost the owners less to stall, and enhanced their value. Under these facts, the Scotch courts (15 *Judiciary Cases*, 84) held the practice not to be cruelty within a similar Act, and justifiable under the circumstances. The Irish courts, in Callaghan *vs.* S. P. C. A. (16 L. R. (Ir.), 325) reached the same conclusion. In the former case Lord Young said that the statute must not be construed to "interfere with the judgment of those who are pursuing their own affairs to the best of their judgment, however much they may be mistaken in the judgment of others." In the Irish case, Morris, C. J., said: "Looking at the suffering in reference to the object with which it is inflicted, it cannot in my mind be considered as unnecessary, for the object is reasonable and adequate."

The same practice came before the Judges of the English Queen's Bench Division, and they, in the very latest case, dissented from the Scotch and Irish courts upon the facts, but Lord Chief Justice Coleridge says: "Necessity, to form an excuse under the statute, does not mean simply that the effect of an operation cannot be otherwise secured. *There must be a proportion between the object and the means.* Mutilation of horses and bulls is necessary, and undoubtedly lawful." Said Judge Hawkins: "The beneficial or useful end sought to be attained must be reasonably proportionate to the extent of the suffering caused."

Applying the principle of these cases to vivisection, it may be safely affirmed that the distinction sought to be made in the Shimwell case between original research and class demonstration is untenable. If vivisection substantially adds to the ever-growing fund of human knowledge (and who can question it?), or if it enables the professor to demonstrate more thoroughly the value or danger of particular operations to his class, or if the practitioner substantially adds to his dexterity and skill by its use, it is, on either of these grounds, legally justifiable, and is not "cruelty" in the legal meaning of the word. If, to add to the pecuniary value of sows and other cattle, it be justifiable to mutilate them, how unjustifiable is a prosecution that seeks to bring within the pale of the criminal law a scientist who for the good of his fellow-men, and with every precaution to spare the animal unnecessary pain, sacrificed it upon the high altar of science?

The Royal Ophthalmologist.—The ophthalmologist, Prince Carl Theodor, of Bavaria, proposes to establish an eye clinic near Munich, similar to that which he has conducted at Tegernsee, and the hospital at Schwabing will afford all the accommodation required at the outset.

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CLINICAL MEMORANDA.

THERAPEUTICAL.

Cod-liver Oil Emulsion.—Cod-liver oil emulsions, in various forms, are preparations which have of late become somewhat popular. I express no opinion whatever on any of these preparations, far less do I intend to individualize any preparation by attempting to give a copy of the formula. I simply recognize the unfortunate necessity which sometimes arises of following where our inclination does not lead, and I therefore give a formula for an emulsion, believing it, without prejudice, equal to any of the many now before the profession and the public.

Of all the excipients suggested by different authorities as well as commending themselves to one's own approval for emulsifying cod-liver oil, none, I think, equals gum tragacanth. Without, therefore, ignoring other substances, such as mucilage of gum arabic, white of egg, alkaline solutions, and so on, I have principally endeavored to ascertain the conditions most favorable to produce with tragacanth an inseparable emulsion, which, at the same time, would be miscible with water, contain a reasonable amount of oil, and be not particularly objectionable in appearance, taste, or smell. Of course, in all these preparations, much may be left to individual fancy as to combination; and I, therefore, make no suggestion as to all the different ingredients which may be added, further than this, that if oil of bitter almond be the flavoring agent used, both experience and experiment have determined that a half per cent., or about two drops to each ounce of cod-liver oil, is the proper proportion; and that of the two oils, namely, an oil deprived of its hydrocyanic acid, or an oil containing it, the latter is preferable.

As to the emulsion, let three drachms of the finest white powdered tragacanth be rubbed up in a large mortar with three ounces of glycerin, to this add as much boiling water as will convert it into a thick, transparent jelly, from eight to ten ounces probably being required. After cooling add the cod-liver oil, which should first be mixed either with plain water or lime-water, in the proportion of one of the latter to three of the oil; or, if the emulsion is intended to contain the hypophosphites of lime or soda, let these be added to the plain water previous to mixing with the oil, and then let this primary emulsion be gradually added to the mucilage of tragacanth with constant stirring. In the process of mixing, the emulsion not only creams but also thickens up to a certain point; the individual taste must settle the extent to which the mixture may be carried. I have found the three drachms of tragacanth emulsify from fifty to eighty ounces of what I have called the primary emulsion, the former quantity being very thick and not easily poured from the mortar, the latter quantity flowing more freely and forming what I consider the better emulsion. In mixing the oil with the mucilage of tragacanth, care must be taken not to add it too hurriedly, else it will not emulsify; the mixture will simply break up into a clotted mass, and no amount of labor, apparently, will bring it back to the emulsified form. Under these circumstances, the better way is at once to begin again with a small quantity of fresh mucilage, to which the clotted mass should be carefully added by degrees. In this way only can the emulsion be brought back to its proper form.

HERBERT GRAHAM,
FORT WARREN, BOSTON, MASS Hospital Steward, U. S. A.

HOSPITAL NOTES.

PRURIGO. ECZEMA RUBRUM. MOLLUSCUM CONTAGIOSUM.

Abstract of a Clinical Lecture
Delivered at the New York Post-Graduate Medical School.

BY ROBERT W. TAYLOR, M.D.,
PROFESSOR OF DERMATOLOGY.

DR. TAYLOR said that he intended to present to the class a typical example of a disease which has not been very well understood in this country, where it hitherto has been looked upon as a great rarity. It is all-important to be familiar with it, as the general practitioner is much more liable than the dermatologist to meet with it, particularly in the early stages. In this country we have been so sceptical about it that undoubtedly cases have been observed which were erroneously considered as eczema, ecthyma, urticaria, or impetigo. The disease under consideration is known as the prurigo of Hebra. It was first described by Willan as prurigo, and his description was elaborated by Hebra, who gave an unexcelled clinical history of a more exaggerated form of the disease. In this lecture we shall consider the two diseases—the prurigo mitis of Willan, and the prurigo ferox of Hebra.

During more than twenty years, cases of the so-called prurigo of Hebra have been presented to the New York Dermatological Society; but the members of that body had such an abiding impression that the disease was exceedingly rare, that they received these cases with derision, and the men who presented them, not feeling positive of their diagnosis, have not been bold enough to withstand this opposition. It must be remembered, also, that as these cases were seen at night, many of the papules and other lesions may have been unnoticed.

At a meeting of the American Dermatological Association, in Boston, last September, a very intelligent dermatologist of Chicago, Dr. Zeisler, read a paper, in which he asserted that he had seen quite a number of cases—at least twelve—of this disease. The members marvelled that this young man should have seen in a few years so many cases—almost as many as all the other American dermatologists combined had seen. It so happened that Drs. Bowen and Tilden, of Boston, also presented a good case of prurigo. After thinking over the matter, Dr. Taylor had recalled three cases which he had seen—two in children, and one in a man—and the other members in like manner were able to recall a few examples of this disease.

The disease is not infrequent in Europe, but here it has been considered exceedingly uncommon. A careful examination of the literature of this subject would probably show that not more than fifty cases had been observed up to the present time in America.

CASE I.—Dr. Taylor then presented an eight-year-old girl, who is said to have had prurigo for four years. It is highly probable that she has had it much longer, and that, owing to its insidious onset, it had not been noticed.

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The disease is never congenital, but commonly begins before the patient reaches the age of two years. According to Hebra, it is a disease which ceases only with death, and his writings lead us to suppose that many of the older subjects, made desperate by their prolonged suffering, are driven to suicide.

When the eruption began in this child, it was thought to be only mosquito-bites. This is the usual story; the patients are either thought to suffer from insect bites or urticaria, and the family physician, ignorant of the serious nature of the disease, usually agrees with the parents as to the insignificant character of the eruption.

Some cases appear to be in their usual health, but many are evidently anæmic, or become so with the progress of the disease. The amount of anæmia or cachexia will usually be proportionate to the extent and intensity of the pruriginous disease, and also to the social conditions of the patients, who usually belong to the poorer class.

So far, this patient has not suffered very much, for we are told that she does not scratch very much, except at night. This case is no exception to the rule that when the patient is much out-of-doors, and perspiring freely, as in summer, the disease is temporarily held in abeyance. Crocker, of London, noticed that the disease was better in winter than in summer; but his experience is opposed to that of every other dermatologist.

The child's face presents an admirable picture of the prurigo. The pale facies is characteristic; some of the papules are whiter than the skin; others are yellowish, and they vary in size from a small to a large pin's head. The papules are conical, and the eruption shows one feature which Hebra insisted upon—*i. e.*, that the head and nucha are not involved, but the papules begin to develop where the shoulders merge into the neck. The dried blood-crusts on the apices of some of these papules show that they have been scratched fiercely. These patients usually scratch the scalp a good deal, and the hair becomes dry and rough, but not very scurfy. The eruption extends from the roots of the fingers to the elbow, and the disease has been localized for a number of years upon the extensor surface of the forearm, entirely sparing the bend of the elbow, and is now throwing out a number of scattered papules on the flexor surface, and spreading upon the arm by the same mode of development and distribution of these lesions. The papules are abundant on the forearms, scattered without order, and are not grouped in any way. The disease has skipped from the shoulders to the buttocks, where the papules are more sparsely distributed; and the scratch-marks and blood-crusts on these regions tell the story of vigorous scratching. The eruption is not present in the popliteal region, but on the outer and posterior portion of the leg one finds some whitish, conical, and crust-covered papules. The papules here are seen to be quite large, owing to the hyperæmia and cell increase which result from the scratching. Ordinarily, the papules, as stated, vary in size from that of a hemp-seed to that of the head of a large pin. The thighs are entirely free from the disease.

The glands in the neck are very much enlarged, and the epitrochlear and inguinal are also increased in size, but to a less extent. The amount of adenopathy is usually in proportion to the duration, extent, and severity of the disease; so that when the patient reaches the age of puberty, these glands, particularly in the groin and over Scarpa s triangle, are hard and nodular, and may be as large as one's fist.

The primary lesion in this disease is an effusion of serum and leucocytes, from the upper layer of vesicles, into the substance of the papillæ; and the papules, although not so superficial, resemble vesicles in thus containing serum, which, however, is present rather low down in the corium. The effusion of serum is the result of an inflammatory process, which gives rise to hyperplasia of the papillary body, thickening of the whole epidermal structure, and of the rete, with pigmentation of the latter. The case before the class shows this yellowish brown pigmentation on the hands, as a result of the hyperæmia produced by scratching; and if the disease be not arrested, the deposit of pigment will continue until the skin will become as dark as that of a mulatto. As another result of the inflammatory process and of scratching, one will notice an entire absence of lanugo on the back of the hand; and also that the natural furrows of the skin are greatly enlarged, as is best shown about the wrists of this patient.

Sometimes the papules are not visible, but by passing the finger with firm pressure over the skin, one can readily detect the peculiar shot-like feeling of the skin.

So far, there have been presented the clinical features of a typical and uncomplicated case of prurigo. But the disease is often complicated, and in a measure masked by urticaria, eczema, or by the occurrence of furuncles, ecthymatous pustules and ulcers, or by an impetiginous condition. In such cases inquire into the early history, and remember that prurigo begins, when the child is young, with so-called flea-bites upon the extremities, and that it is attended with great itching, usually from the beginning.

It is probable that in very many cases prurigo begins as an urticaria, which is the outward and visible sign of dyspepsia; and the gastro-intestinal troubles are the cause of the urticaria or papular erythema, which is, in turn, the starting-point of the prurigo.

Treatment.—This naturally leads to the question of prophylaxis, and enforces the practical deduction that great attention must be given to the diet of the children who are the subjects of recurrent urticarial or papulo-erythematous eruptions. All causes of gastro-intestinal irritation must be removed on account of the powerful influence which they exert, by reflex action, upon the skin in the production of inflammation. Having secured a healthy condition of the digestive tract, the next thing is to see that nothing irritating comes against the skin. This child has on merino underwear, which is very good; but the rough stockings are very bad. No flannel should come in contact with the skin. Apply dusting powder to all chafes, and avoid the use of too much bed-clothing. Quinine and arsenic have proved ineffective; cod-liver oil is useful in most cases where it is well borne by the stomach; in the present instance it would be well to give two or three grains of the ammonio-citrate of iron three times a day. Quinine should be carefully avoided in prurigo, since it often causes congestion and irritation of the skin and an exaggeration of the pruriginous eruption.

The best local treatment consists in the use of warm alkaline baths (90° to 96°), followed by an inunction

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with 5 per cent. carbolized vaseline. The next day, it is a good plan to make use of inunctions with vaseline, sweet or almond oil, applied three times a day, with a view of preventing the dryness of the skin so common in these cases. The various antiparasiticides—*e. g.*, the tars, carbolic acid, cocaine muriate, peppermint, camphor, etc., may be employed, and Kaposi considers naphthol very valuable; but Dr. Taylor thinks the alkaline baths and inunctions are more beneficial.

CASE II.—The next case was a baby four months old with eczema rubrum of the face. It began as a small spot on the ear, which was washed and irritated until this eruption developed, which involves the forehead and both cheeks, resembling a mask. The patient presents a typical picture of that form of scaly eczema which Unna calls seborrheic eczema. The eruption develops anywhere where there is pressure, moisture, or irritation, as on the nates and in the popliteal spaces. The impress made upon the system by this original eczema constitutes a morbid tendency in the skin itself. It is not, as the older writers used to consider, due to a diathesis. Debilitated children are more liable to inflammatory processes, and some children have more delicate skins than others. The child's skin is very susceptible to inflammation, for it is soft and succulent, and contains young cells undergoing very rapid growth, and peculiarly prone to inflammation.

Treatment.—Stop the washing, and remove all other sources of irritation. If the adjacent parts must be washed, let it be done with a lotion consisting of one part of bay rum to four parts of water, lightly sopped on the affected parts. Internal medication may be required, but external treatment is usually competent to effect a rapid cure. For the patches on the face and arm, nothing is better than the following, which is to be smeared over the face, and will remain on the parts like a paste:

℞.—Camphor	. . . .	15 grains.
Calomel	. . . .	½ drachm.
Starch, Zinc oxide	. . of each	2 drachms.
Vaseline	. . . .	½ ounce.—M.

Never use this paste or the oxide of zinc ointment upon the scalp or palms, for it is too drying. In all these cases it is well to give, every three or four days, a powder containing one or two grains of calomel, and to avoid all sources of gastro-intestinal irritation.

CASE III.—The next patient was a child four and a half years of age, who has had an eruption for the last two months about the eyes and neck. It consists of little yellowish and pinkish sessile and pedunculated tumors, scattered over the upper eyelid and near the canthus on the right side, on both the left eyelids, and of two larger isolated tumors on the chin and over the notch of the sternum respectively. This disease is variously designated as molluscum contagiosum, molluscum epitheliale, molluscum simplex, and molluscum sebaceum. There is still a want of unanimity of opinion as to the structure of these little tumors, some thinking they are connected with the sebaceous glands, while others say they have no connection whatever with these glands, but are formed from the cells of the rete. The question of the contagiousness of this disease is still in dispute, although a case was recently reported in France, in which material was said to have been rubbed from one child to another, causing the disease; but the volume of testimony is against its being contagious, and conflicting testimony may be explained by insufficient and incorrect observation, or by coincidences.

The disease is most commonly found in young children, but it is also met on the penis, scrotum, and female breasts and external genitals of adults.

Treatment.—The smaller tumors can be readily destroyed by the electrolytic needle; while larger ones should be bisected, their contents squeezed out, all ragged tissue cut away, and antiseptic healing promoted by dusting the surface with iodoform or boric acid. In certain localities they may be snipped off with scissors or ligated. In this case chloroform or ether narcosis would be necessary before the removal of the tumors about the eye could be attempted.

In some cases the disease is very extensive; Dr. Taylor said that he had a photograph of a child on whom were between two and three thousand of these little growths.

If left alone they wither and form small tumors called nævus mollusciformis.

MEDICAL PROGRESS.

Diet in Diseases of the Kidney.—DUJARDIN-BEAUMETZ assumes that in disease of the kidney with insufficient secretion of urine it is of primary importance to prevent the formation of toxic ptomaines in the digestive tract. This is attained by the administration of intestinal antiseptics, such as naphthalin and the salicin compounds, and a carefully regulated diet. The flesh of animals and fish, particularly if not fresh, always contain ptomaines, and hence should be interdicted, or, if used at all, must be absolutely fresh and thoroughly cooked. For the same reason old cheese should not be taken. The nourishment should consist chiefly of hard-boiled eggs and such vegetables as beans, peas, lentils, and potatoes, which may be made into a thick soup. Green vegetables may be used and also mush made from corn, barley, or oats. Fruit may be eaten freely. The drink should consist of milk or light beer. White wine well diluted with water may be occasionally used.—*Prager medizinische Wochenschrift*, February 19, 1890.

Prescription for Chronic Rheumatism.—The *Kansas City Medical Index* quotes the following as a favorite prescription of the late Dr. Fothergill for chronic rheumatism:

℞.—Arsenious acid	. . .	3 grains.
Pulverized guaiac	. . .	3 drachms.
" capsicum	. .	½ drachm.
Pill of aloes and asafœtida	.	3 drachms.

Mix and divide into 120 pills, of which one should be taken three times daily.

Hypodermic Injections of Thymolate of Mercury in Syphilis. The excellent effects obtained by Jadassohn and Zeising in the treatment of syphilis by subcutaneous injections of the thymolate and the salicylate of mercury are confirmed by WELANDER (*Centralblatt für klinische Medi-*

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cine, February 22, 1890) who has made a number of injections with the acid thymolate (one part in ten parts of liquid paraffin). The pain of the injections is trifling, but more or less infiltration usually occurs at the seat of injection. In one case a trace of albumen was found in the urine during treatment. In all cases mercury was found in the urine, its first appearance varying from two hours to several days after the first injection. Mercury continues to appear in the urine for some days; in one case it was found one hundred days after the last injection. Welander prefers the thymolate to the salicylate, as in his experience it causes less pain and infiltration than the latter.

New Operation for the Radical Cure of Hernia.—DR. WILLIAM S. HALSTEAD, of Baltimore, has recently reported in the *Johns Hopkins Hospital Bulletin* five cases of hernia treated by the following method:

1. The incision begins at the external abdominal ring, and ends one inch (less than one inch in children) to the inner side of the anterior spine of the ilium on an imaginary line drawn through the anterior superior spines of the ilia. Throughout the entire length of the incision everything superficial to the peritoneum is cut through.

2. The vas deferens, with its vessels, is carefully isolated up to the outer termination of the incision, and held aside.

3. The sac is opened and dissected from the tissues which envelop it.

4. The abdominal cavity is closed by quilted sutures passed through the peritoneum one and one-half to two inches above the so-called neck of the sac.

5. The vas deferens and its vessels are transplanted to the upper angle of the wound.

6. Interrupted, strong silk sutures, passed so as to include everything between the skin and the peritoneum, are used to close the deeper portion of the wound, which is sewed from the crest of the pubes to the upper outer angle of the incision. The cord now lies superficial to these sutures and emerges through the abdominal muscles about one inch to the inner side of the anterior superior spine of the ilium.

7. The skin is united over the cord by interrupted stitches of very fine silk. These stitches do not perforate the skin, and when tied they become buried. They are inserted in the under side of the skin, and made to include only the deeper layers—the layers which are not occupied by sebaceous follicles. Thus infection of the sutures from organisms which may be present in the follicles is avoided.

8. One or two small, short gauze plugs are used as wound drains.

The immediate result in all the cases reported was good. Three of the patients were children, two adults. Sufficient time has not yet elapsed to test the ultimate results.—*Annals of Surgery*, March, 1890.

The Treatment of Acne.—In a recent lecture on acne, DR. J. FRANK PAYNE (*Lancet*, February 15, 1890) gave the following advice upon the treatment of the disease: Patients should be told to wash the parts at night with hot water and strong soap—soft-soap in small quantities if the skin is thickened. Friction with a towel should follow the washing. If the comedones are abundant and not removed by the washing and friction, they may be squeezed out with a suitable instrument. Washing should precede the expression, and a lotion should be applied immediately afterward. In acne vulgaris this should be supplemented by certain drugs, of which sulphur is the most useful. Absolutely dry sulphur does not affect the tissues at all, and it is most efficacious when combined with an alkali. An excellent alkaline sulphur lotion is as follows:

℞.—Precipitated sulphur . . . 15 grains.
Glycerin . . . . . ½ drachm.
Spirit of camphor . . . 5 minims.
Lime-water . . . . 1 ounce.—M.

For some skins the lime-water is too strong, and the mixture may be diluted with rose-water. This should be applied at night with a soft sponge or pledget of cotton, allowed to dry, and washed off in the morning. The usual sulphur ointments are too strong; 15 grains of sulphur to an ounce of soft paraffin or benzoated lard, to which may be added 10 minims of carbolic acid, is of the proper strength and forms a useful application. To make this alkaline, 15 grains of potassium carbonate may be added.

This treatment, though it may not entirely remove the disease in young persons, will cure the attacks as they recur. Another excellent application is the following:

℞.—Corrosive sublimate . . . ½ grain.
Emulsion of almond oil . . . 1 ounce.—M.

Lead or zinc mixtures may be used, if there is much inflammation, but it should not be forgotten that the lead salts turn black in the presence of gases containing sulphur. Bismuth subnitrate may be used according to the following formula:

℞.—Bismuth subnitrate . . . 20 grains.
Glycerin . . . . . 1 drachm.
Rose-water . . . . 1 ounce.—M.

Or, the bismuth may be replaced by the same amount of zinc oxide.

In the internal treatment we must be guided by the condition of the patient. Beer and alcoholic drinks should be avoided, and the patient should be kept upon a laxative regimen. The administration of magnesia, in the form of purgative waters, and sulphur, has an excellent effect. In some a change of diet alone is sufficient to cure the acne. If anæmia or other diseased conditions exist, they must be treated on general principles.

Treatment of Foreign Bodies in the Larynx and Trachea.—In a recent monograph upon foreign bodies in the air-passages, by DR. MOURE, of Paris, the following advice is given: Do not use emetics; they do more harm than good, favoring deeper penetration of the body, impaction in the larynx, and sudden suffocation. Hard and heavy bodies may often be displaced by inversion, especially under chloroform, which relaxes glottic spasm. No attempts at removal should be blindly made with forceps; the gravest consequences often follow such procedures. If it is decided to open the larynx, tracheotomy should be previously done. If the body is situated in the trachea or bronchi, deep tracheotomy is necessary, proceeding

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slowly and exposing a large part of the trachea. If the object cannot be extracted during the operation, the tracheal wound should be left open and subsequently attempts at spontaneous expulsion be excited, or the patient be inverted.—*Journal of Laryngology and Rhinology*, February, 1890.

Antiseptic Tooth Wash.—The following prescription for an antiseptic mouth wash is quoted in the *Therapeutische Monatshefte*, February, 1890:

℞.—Saccharin	15 grains.
Sodium bicarbonate . . .	8 "
Alcohol	3 ounces.
Oil of peppermint . . .	2 drops.—M.

One teaspoonful in a small glass of water.

The Dose of Antifebrin.—In a paper upon antifebrin (*Prager medicinische Wochenschrift*, No. 48, 1889) DR. STEIN writes that though he uses antifebrin as an antipyretic frequently, he has seen in aged and weak persons doses of eight grains produce disagreeable symptoms of cerebral excitation and even hallucinations. He advises with such patients a beginning dose of one and one-half grains.—*Schmidt's Jahrbücher*, January, 1890.

Antiseptic Treatment of Gastro-enteritis.—A writer in the *Revue Générale de Clinique et de Thérapeutique*, January 23, 1890, advises creolin in the treatment of gastro-enteritis, and prescribes it as follows:

℞.—Creolin	8 minims.
Pulverized sugar . . .	75 grains.

Mix, and divide into ten powders, one of which may be given every two or three hours.
Or,

℞.—Creolin	1 to 2 drops.
Syrup	1 ounce.
Peppermint water . .	2 ounces.—M.

Of this a teaspoonful may be given every one or two hours.

Asepsis of the lower bowel may be secured by enemata of one ounce of sodium benzoate in one quart of water; boric acid one to five drachms, sodium salicylate in the same quantities, or resorcin seven grains in a quart of water. Enemata of equal parts of lime-water and distilled water may be used for the same purpose.

The Resuscitation of Asphyxiated Infants.—DR. ALEXANDER DUKE practises the following method of resuscitating asphyxiated infants whose hearts have not ceased to beat:

If the cord is pulsating strongly, he does not cut it at once, but waits for a few minutes, until the pulsation has almost entirely ceased. He then raises the flaccid body of the child, and, turning it face downward, supports the chest with his left hand, and at intervals of five seconds compresses the thorax with the same hand. With the right hand he carefully wipes all mucus out of the mouth and throat of the child, which process is assisted by the position of the infant. If cardiac action becomes weaker, the child is plunged into a large basin of hot water, at the same time rubbing the back and chest vigorously. The friction over the spine is particularly serviceable as a respiratory stimulant. In a few instances he has found it of advantage to suspend the child by the legs, with the back close to a fire.—*London Medical Recorder*, January, 1890.

The Treatment of Sciatica.—DR. R. M. SIMON writes in the *Birmingham Medical Review* that it is essential in every case of sciatica to order absolute rest of the limb. Most cases, if treated thus and with the addition of hot poultices over the affected nerve, will soon recover. In the gouty diathesis it is advisable to prescribe saline purgatives with potassium iodide and antifebrin. Hypodermic injections of morphine or cocaine will give temporary relief, but are not curative. Galvanism may be used while the pain exists, and the best method is that of Stevenson, who applies a positive pole of metal covered with wet chamois skin, and gently passes a carbon disk negative electrode up and down over the course of the sciatic nerve.

It is not unreasonable to suppose that much of the acute pain of sciatica is due to the pressure of increased fluid within the nerve-sheath, and this hypothesis offers an explanation of the good results which often follow acupuncture, leeching, or massage.

Nerve-stretching should be employed only as a *dernier ressort*.—*Medical Chronicle*, January, 1890.

The Parenchymatous Injection of Creasote in Phthisis.—DR. ANDRESEN, of Jalta, reports his results in the treatment of phthisis by the parenchymatous injection of creasote (*Internationale klinische Rundschau*, February 9, 1890). The injections, sixty in all, were made upon six patients in an advanced stage of the disease. In two patients the injections were immediately followed by slight hæmoptysis, which, however, soon ceased without special treatment. No influence on the fever could be detected in these cases. In one case the cough always became worse for a few hours after the injections. In another case the cough ceased for several hours after injection, then dyspnœa appeared, and the cough became more severe. In a fifth case night-sweats, which had been profuse, were checked for two days. This was observed in this patient on three occasions. A sixth patient suffered from very violent cough and high fever, and there were cavities in each lung. Here the first four injections caused a positive improvement in the symptoms, but later the treatment was without effect.

In Andresen's cases injection into cavities caused an immediate spasmodic cough, burning in the throat, and a strong odor of creasote in the breath, symptoms which were very distressing to some patients. The operation causes but little pain, particularly if practised on the back. Anteriorly in the second intercostal space it causes slight pain lasting a few hours. The amount of creasote used at each injection is not made apparent by the author.

Cocaine Anæsthesia in Litholapaxy.—FREUDENBERG employs cocaine in large amounts as an anæsthetic in litholapaxy. At first he used fifteen grains for an operation, but found it insufficient, and now uses much larger quantities. In but one of his cases was cocaine intoxication observed. The procedure is carried out as follows: The bladder is first thoroughly irrigated with a boric acid

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solution. Then about six drachms of a six, eight, or ten per cent. solution of cocaine is injected directly into the bladder through a soft catheter. The catheter is then partly withdrawn, and an equal amount of the solution is injected through the prostatic urethra into the bladder. Following this the catheter is still further withdrawn, until the eye is in the anterior urethra, which is filled with about one drachm of the solution, the meatus being closed with the fingers. In six or eight minutes the bladder is distended with about five ounces of boric acid solution, and the operation begun.—*Centralblatt für Chirurgie*, February 8, 1890.

The Treatment of Acute Coryza.—DR. C. H. STOWELL advises the following treatment for ordinary acute colds: If the patient is seen early, he should at once have a hot foot-bath and a bowl of hot lemonade. He should then be put to bed and covered with blankets until copious perspiration is produced. If seen at a later stage, the tincture of aconite should be given in half-drop doses for a few hours or until its physiological action is apparent. If the discharge from the nose is thin, or if the throat is involved, small and frequent doses of the tincture of belladonna will give marked relief. A brisk cathartic is often indicated, and generally desirable. Associated with this general treatment in the early stage, the nasal cavities should be sprayed with the following solution:

℞.—Cocaine hydrochlorate . 4½ grains.
Antipyrin . . . . 18 "
Sodium bicarbonate . . 5 "
Water . . . . 1 ounce.—M.

The spray should be repeated as often as the nares become occluded. If nasal symptoms remain after twenty-four or thirty-six hours, it is better to substitute a spray with an oil for a base, thus:

℞.—Cocaine hydrochlorate . 9 grains.
Water . . . . ½ drachm.
Dissolve, and add:
Fluid cosmoline . . . 1 ounce.
Oil of eucalyptus . . . 6 drops.
Oil of gaultheria . . 3 "

This spray may be used morning and night until the acute catarrhal symptoms have disappeared. The following powder may be used in place of either of the above solutions:

℞.—Sodium bicarbonate . . 2 grains.
Magnesium carbonate . 3 "
Menthol . . . . 1 grain.
Cocaine hydrochlorate . 4 grains.
Milk sugar . . . . 1½ drachms.—M.

To be used as a snuff.—*New York Medical Journal*, March 1, 1890.

Balanitis from Applications of Calomel.—M. CORDIER calls attention to a fact which has long since been known, that when tincture of iodine, or iodine ointment, is applied to a surface which has previously been rubbed with mercurial ointment, a severe irritation is set up; this is so severe as to produce vesication at times, and the effects will be observed even if the mercurial inunction has been made some days previously. This explains, partially, the origin of the new variety of balanitis, to which he calls attention in the *Lyon Médical*. It is observed in individuals who, while taking iodide of potassium, make applications of calomel to the glans and prepuce. A severe balanitis generally results. It is very probable that vulvitis, in women, is also often provoked by the same means, so that whenever external applications to the genitalia of men or women are about to be ordered, care should be taken to ascertain whether they are taking iodide of potassium or not. If the former is the case, calomel should be avoided as a dressing. M. Cordier claims that the circumstances alluded to above are a much more frequent case of balanitis than is generally supposed.—*St. Louis Medical and Surgical Journal*, March, 1890.

The Treatment of Eczema in Children.—According to SAALFELD (*Archiv für Kinderheilkunde*), eczema intertrigo about the genital and anal region is especially frequent in fat children, and is usually associated with digestive disturbances demanding the regulation of the diet before anything else. Locally the most grateful and healing application is composed of equal parts of a five-per-cent. solution of boric acid and lead-water applied on pieces of muslin or linen, and renewed every time the diapers are changed. The acute inflammation usually ceases at the end of the second day, when a five-per-cent. ointment of boric acid in vaseline should be substituted for the lotion, painted on with a brush and then covered with the ointment spread on a cloth. If there is much moisture present, the parts should be powdered with talc or equal parts of talc and zinc oxide, and covered with cotton dusted full of the powder. The diapers should be changed frequently, and the old powder, if wet and caked, removed before new powder is applied. In fat children with eczema of the head the supply of fat in the food must be lessened, the frequency of nursing being reduced. If constipation is present, small doses of calomel may be given. Locally all crusts are to be removed by soaking in oil and then removing with soap and water. If much exudation is present, Lassar's paste, with boric acid five per cent., or the benzoated oxide of zinc ointment, may be used. If there is not much exudation, apply a simple five or ten-per-cent. boric-acid ointment. In the squamous stage an ointment of fifteen grains of white precipitate, sixty-five grains of balsam of Peru, and an ounce of zinc oxide ointment will soon complete the cure. The skull-cap of linen is a necessary adjunct to this treatment, and it is well to bind up the hands to prevent scratching. In general eczemas of strumous children either phosphorus or arsenic in cod-liver oil must be administered. Water must be kept away from all eczematous skins.—*New York Medical Journal*, March 8, 1890.

Prescription for Eczema of the Anus and Scrotum.—According to the *Journal de Médecine de Paris* the following is a favorite prescription of Unna for obstinate eczema of the scrotum and anus:

℞.—Linseeed oil, Lime water, Zinc oxide } of each . 6 drachms.
Iodoform . . . . 1 to 2 " —M.

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SATURDAY, MARCH 15, 1890.

INTRA-TRACHEAL INJECTIONS OF CREASOTE OIL IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

FROM a theoretical point of view, the discovery of the cause of a disease is the first step toward its specific treatment; but, practically, this is far from being the case. The causes of the very few diseases for which we have specifics have been ascertained long after the latter had been universally employed. Such well-known facts might have moderated the therapeutic expectations that were raised by Koch's discovery of the tubercle bacillus, and doubtless did so in the minds of many thoughtful men who had felt the irony of the maxim: *Sublata causa tollitur effectus.* The search for specifics, however, is still pursued; and the failure of one investigator seems only to incite another to greater and more daring activity. The latest example of this tendency is found in the treatment of pulmonary tuberculosis by intra-tracheal injections, as pursued by DOR, of Lyons, and described in the *Revue de Médecine*, Nos. 10, 1889, and 2, 1890. This method is a modification of that employed by Beehag in the treatment of laryngeal phthisis. The latter, by means of a specially constructed syringe, injected mentholated oil into the larynx, whereas Dor, after slightly altering the instrument, injects creasote oil into the trachea, with the object of causing it to penetrate into the lung parenchyma. That this object may be thus accomplished is proved by experiments on animals, undertaken by Dor before the application of the treatment to man.

If a guinea-pig be killed immediately after the intra-tracheal injection of one cubic centimetre of creasote oil, the latter will be found to have reached the smaller bronchi, and after the lapse of from twelve to twenty-four hours numerous alveoli will be filled with the medicament, which may be found in the pulmonary parenchyma during the period of fifteen days.

In view of the tardiness with which creasote oil disappears from the lung tissue, Dor experimented with two other vehicles for creasote—vaseline and glycerin—but found them both inferior to olive oil, the former giving rise to numerous hæmorrhagic extravasations, and the latter causing intense dyspnœa, marked symptoms of asphyxia, and, in some instances, hæmoptysis.

Dor's solution is composed of five grammes of pure creasote to one hundred grammes of olive oil, sterilized by boiling, and the quantity injected varies from 0.50 to 2 cubic centimetres.

The immediate effect of the injection varies with the individual susceptibility, from paroxysms of cough to well-marked laryngeal spasm. In one instance Dor performed intubation after the injection, although he says the demand for it was not urgent. Very soon after the injection all disagreeable sensations disappear, and a tolerance for them is soon established; so much so that some patients are said to continue talking until the moment of injection, resuming the thread of their discourse, or completing an interrupted sentence, immediately thereafter. One patient, after leaving the hospital, administered the injections to himself.

Dor characterizes the injection of medicinal substances into the lung tissue by puncturing the subclavicular tissues or the trachea as a barbarous proceeding, and in this we are inclined to agree with him. The criticism to which all intra-pulmonary injections are exposed is the absence of certainty as to their direction. With Dor's method there can be little doubt that the injected material must invade and occlude a certain number of sound alveoli, every one of which is needed for the function of the crippled lung. He endeavors, it is true, to direct the injection toward one side or the other by advising a left lateral decubitus when the left lung is affected, and *vice versa*, and no doubt with a certain amount of success.

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This method of treatment has been followed systematically in twenty cases which, so far as their progress is concerned, may be divided into three classes: 1. Those exhibiting marked improvement. 2. Those whose improvement was slight. 3. Those whose condition remained the same or grew worse.

The first class numbered seven and the improvement was manifested principally by diminution or cessation of cough, and increase in weight. In these cases, with one exception, the treatment lasted more than fifty days, from three to ten grammes of pure creasote in from sixty to two hundred cubic centimetres of oil having been injected.

The second class numbered eight, and was characterized by diminution of the expectoration, slight increase in weight and reappearance of appetite. As a rule the cough persisted. The treatment in these cases lasted from seventeen to sixty-eight days.

Of the remaining five cases, the treatment was imperfectly carried out in three, and the remaining two were complicated with pleurisy.

Dor advises that the treatment be continued for at least one month, during which two cubic centimetres of creasote oil are injected twice daily. In cases with large vomicæ, he recommends the employment of a more powerful antiseptic than creasote, and suggests a solution of camphorated naphthol.

The results reported by Dor, although based upon a small number of cases, seem to warrant a further trial of this mode of treatment. The chief obstacle in its way is that it calls for a degree of manual skill possessed by few, and this fact may be used either as an argument for the reference of phthisical cases to the throat specialist or the cultivation of the use of the laryngoscope by the general practitioner.

REVIEWS.

A MANUAL OF ORGANIC MATERIA MEDICA. By JOHN MAISCH, Ph.M., Phar.D. Fourth edition. 12mo., pp. 539. Two hundred and fifty-nine illustrations. Philadelphia: Lea Brothers & Co., 1890.

A WORK which, like the one before us, has passed through four editions in seven years, is too well known to require more than a passing notice. The scope of the work "embraces the drugs of animal and vegetable origin recognized by the Pharmacopœias of the United States and Great Britain, supplemented by important non-officinal drugs." The subject is one in which a good classification is almost as important as accurate description, and each of these requirements is so well attained by Professor Maisch that materia medica is divested of much of its proverbial "dryness."

The present edition differs from the preceding chiefly in the addition of a list of drugs arranged according to origin—an arrangement which seemed to be particularly appropriate at the present time, in view of the approaching revision of the United States Pharmacopœia.

Not the least important feature of the volume, is the number and excellence of the illustrations, which are remarkable for clearness and perfect execution.

The book is warmly recommended to students as a text-book, and to physicians and pharmacists as a work of reference.

THE PHYSICIAN'S LEISURE LIBRARY. EDUCATION AND CULTURE AS CORRELATED TO HEALTH AND DISEASES OF WOMEN. By A. J. C. SKENE. 12mo., pp. 127. Detroit: George S. Davis, 1889.

JUST at this time, when so much interest is shown in the subject in which this book deals, it is not unnatural that so pushing a publisher should put upon the market a book written by one whose long experience should certainly qualify him to act as a judge concerning the questions of which he writes.

The book before us is written in an easy conversational style, and is not loaded down by a large amount of stupid statistics and figures, devoted to the proving of the statements of the author, and, at the same time, a sufficiently scientific tone is maintained to prevent the text from becoming too dogmatic. Through an error on the part of the printer, we notice that on the cover the author's name is placed as "J. A. C. Skene," but on the front page as "A. J. C. Skene," the latter, of course, being correct.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, February 13, 1889.

L. EMMETT HOLT, M.D., IN THE CHAIR.

DR. A. SEIBERT presented an improved sterilizer and set of nursing-bottles, and read a paper entitled

A REFORM IN ARTIFICIAL FEEDING OF INFANTS.

He said, at the outset, that all food entering the body above the requirements for nutrition, was a hinderance to digestion and a danger to health. It might be stated as a rule, to which the exceptions are few, that children who are artificially fed are over-fed, often very greatly so. It is only very recently that the mind of the medical profession has been turned at all in the direction of the quantity of food required by infants. It has been said by many writers that healthy children fix a proper limit for themselves; that children ought to be fed from the breast or bottle until they have had enough, etc. Hitherto, those who have studied the subject of quantity in infant feeding, have made their calculations according to the age of the child, and have disregarded other conditions. One cause for the continued over-feeding of infants, has been that the ordinary nursing-bottles in use have been much too large, often only a single size being

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used during the whole period of infancy, or at least for the first year.

During the last two years, Dr. Seibert has made a very large number of experiments in weighing infants, to see if it were possible to deduce from the weight a rule as to the quantity of food which would be a good guide in practice. From these experiments, covering observations upon over two hundred cases, he has formulated the following rules:

Children of 6–8 pounds require 3 ounces at a time every 2 hours by day, or 8 bottles in the 24 hours.

Children of 9–10 pounds require 4 ounces at a time every 2 hours by day, or 8 bottles in the 24 hours.

Children of 11–14 pounds require 5 ounces at a time every 2 hours by day, or 7 bottles in the 24 hours.

Children of 15–16 pounds require 6 ounces at a time every 2 hours by day, or 7 bottles in the 24 hours.

Children of 17–18 pounds require 7 ounces at a time every 2 hours by day, or 6 bottles in the 24 hours.

Children of 19–20 pounds require 8 ounces at a time every 2 hours by day, or 6 bottles in the 24 hours.

The apparatus devised by Dr. Seibert consists of a tray, capable of holding eight bottles, and which may be placed in any ordinary cooking pot or steamer. The bottles are made in six sizes, the smallest holding three ounces, and the largest eight ounces. The bottles are somewhat oval in form, with a small, flat bottom, without any neck, and with no angles, so that they can be cleaned with the least possible difficulty. They are closed during steaming by rubber corks which have a furrow in the lower third, to allow the steam to escape during the steaming process; at this time the cork is pushed only partly into the bottle. When the steaming process is completed, these corks are pressed down and the bottles made air-tight. The tray is made of tin, and one size can be adapted to hold the different sizes of bottles. Two cupfuls of water are put into an ordinary pot or steaming apparatus, and the tray set in. Dr. Seibert advises the steaming to be continued for thirty minutes in the cool season, and forty-five minutes during warm weather. The apparatus, including the tray, eight bottles with stoppers and rubber nipples, has been manufactured so that it is retailed for one dollar. Upon each bottle is stamped in the glass the frequency of feeding, and the weight of the child for which it is advised. For example, upon the eight-ounce bottle, "for a child of 18–20 pounds, feed every three hours." Upon the smaller bottles is a mark indicating the level to which the bottle should be filled with milk, and the remainder with some diluent, either barley, gruel, oat-meal gruel, etc. The advantage of having the bottles of different sizes, and of such a capacity that they are to be filled for each meal, is evident. There is no temptation on the part of the mother to put two or three meals in one bottle, and she has always measured for her the proper quantity for a single feeding. Dr. Seibert stated that this apparatus was intended especially to meet the wants of the poor and ignorant classes, among which the most serious consequences of over-feeding were seen, often little or no attention being given to the quantity of food administered. After two years' experience with this method of feeding, being guided by the weight, and not the age of the child, in ordering the quantity of food, Dr. Seibert is firmly convinced that the principle is correct. It is to be applied not only to healthy, but also to convalescent children. The amount of work done by different infants is practically the same, consequently the amount of food required will depend upon the size of the body and the amount of tissue to be nourished.

DR. J. LEWIS SMITH opened the discussion upon Dr. Seibert's paper. He thoroughly appreciated the dangers from over-feeding, and regarded this evil as perhaps the most potent cause of gastro-intestinal diseases. He was not quite convinced as yet, that our former method of being guided in the quantity used by the age of the child, was altogether wrong. It was certainly true that there were many cases in which, were we guided by the weight alone, we would fall into error. For example, many children suffering from rickets have large bodies with flabby tissues, often exceeding in weight, by three or four pounds, healthy children of the same age. Manifestly, in this condition, it would be wrong to increase the amount of food according to the child's weight. In convalescing from acute diseases, when a child had been greatly wasted, he thought it would not be a good guide to follow only the weight of the child. Its appetite, its power of digestion, and its general well-being, are also to be taken into consideration. Dr. Smith presented a table quite similar to that published by Dr. Rotch in Keating's *Cyclopædia*, which he had deduced from some experiments made in two institutions to ascertain the actual amount of food taken by nursing infants. Dr. Smith was not prepared to give up the old method of deciding how much a baby should be fed.

DR. J. E. WINTERS thought that Dr. Seibert had overstated the frequency of over-feeding among artificially fed children. He could point to a large number of children brought up artificially, in which this had not been the case. He said it was a great mistake to say that the amount of work done by two infants of the same age was the same. One infant would be in almost continuous motion, and its muscles in a state of frequent contraction. Another would be quiet, and sleeping most of the time, getting very little exercise. He thought as much difference was seen in infants, in the amount of muscular work performed, as between an ordinary day-laborer and a bookkeeper. He was inclined to agree with Dr. Smith, that it was only exceptionally true that the weight was a correct guide to the amount of food required. He thought we would be worse off than at present if such a method were generally adopted. There was no more reason why two infants of the same weight required the same amount of food than two adults. It certainly was not true that a man of 225 pounds required double the food of a man weighing 112 pounds.

DR. W. P. NORTHRUP believed that Dr. Seibert's work was a step in the right direction. He thought the cases stated by both Drs. Winters and Smith were exceptional ones. What Dr. Seibert was aiming at was a general rule for practice, and he believed the one which had been presented would prove useful. Certainly, in the matter of bottles, the apparatus presented was a great improvement upon any now in the market. In regard to sterilizing milk, he did not think that boiling for thirty minutes was sufficient to destroy all the germs present. It might possibly be sufficient to destroy the ordinary germs which sour milk, but was not enough for the bacillus tuberculosis. It ought to be understood by all

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that steam was much more effective as a sterilizing agent than hot water, the water bath being but a very poor substitute for steam. This was often used with the idea that it was ample.

DR. DORNING believed that all the circumstances surrounding the child should be taken into consideration in prescribing its quantity of food. If too much was given, vomiting almost always took place. The quality of the food, as much as the quantity, should be taken into consideration.

DR. SEIBERT thought that the regurgitation of food, or vomiting, was not a good guide as to the fact of over-feeding. A large number of these children never vomited, but suffered more or less from intestinal indigestion and dyspepsia. He had found the method advocated to be most beneficial in cases of convalescence from acute diseases, where, week by week, or day by day, if necessary, according to the increase in weight of the child, the food should be steadily increased.

The CHAIRMAN stated that he thought Dr. Seibert was in error in stating that the weight of the child and the capacity of the stomach bore a constant relation to each other. For the past two years he had been measuring, at autopsy, the stomachs of all infants, these being very carefully distended under hydrostatic pressure until all the folds of the mucous membrane were obliterated, but not beyond this point. These investigations showed a pretty constant relation between the age of the child and the stomach capacity. Thus, beginning with one ounce at birth, it increased on the average nearly one ounce a month for the first six months, and one-half an ounce a month for the second six months of life.

DR. E. L. PARTRIDGE reported a case of

SUDDEN DEATH IN AN INFANT FROM AN UNUSUAL CAUSE.

A stout, well-nourished infant, four months old, in care of a wet-nurse, was put in its crib after nursing, and was found dead half an hour later. The child was reported to have been shaken slightly by the nurse before putting it down. No other evidence of violence could be discovered. At the autopsy the trachea, larynx, and larger bronchi were found to contain a considerable quantity of milk. There was also milk in the œsophagus and pharynx. It was Dr. Partridge's opinion that death had been caused by the entrance of milk into the air-passages.

DR. WINTERS suggested the probability that the child had also been drugged by the wet-nurse, this practice being so exceedingly common with this class of women.

CORRESPONDENCE.

PARIS.

Diabetes. Hypnotism in Obstetrics. Ambulatory Automatism. Suture of the Patella.

To the Editor of THE MEDICAL NEWS.

SIR: PROFESSOR LÉPINE, of the Faculty of Lyon, has confirmed the existence of pancreatic diabetes, which has been clinically demonstrated by Dr. Lancereaux. Dr. Lépine has demonstrated that the complete removal of the pancreas of a dog is followed by a more or less pronounced diabetes. This diabetes, however, does not occur if the slightest portion of pancreas is left, even if the excretory duct has been removed. This the author explains in two ways:

The first theory is that in the normal state part of the pancreatic ferment is re-absorbed and contributes to the destruction of the glucose which may be present.

In fact, if a pancreas is cut to pieces and then placed in a solution of glucose, we find, after a certain lapse of time, that the quantity of sugar has diminished.

The second hypothesis is based on the fact that with diastase starch is transformed into maltose, then into glucose, and that the same occurs when the pancreatic juice is brought in contact with glycogen.

The transformation of glycogen into glucose is, then, a complicated process, which necessitates the intervention of the pancreatic ferment. In the normal state, this ferment is re-absorbed by the pancreatic veins, and passes to the liver through the portal vein. If the hepatic sugar increases or diminishes, it is no longer glucose, but a foreign sugar which is eliminated by the kidney, instead of being used for the purpose of combustion. In either case the pancreatic diabetes would be the result of the presence of too small a quantity of ferment, and a diabetic state would result in consequence of the relative deficiency of ferment, as compared to the quantity of hydrocarbon to be destroyed.

To prove the diminution of the quantity of ferment in the blood, the following experiment has been made. The entire arterial blood of two dogs is separately collected, both dogs having been fasting for sixty hours; but one is normal, while in the other the pancreas has been completely removed. The quantity of sugar of these two specimens of blood diminishes; but while, at the end of fifteen hours, the diminution has amounted to thirty-nine per cent. in that of the healthy animal, it was only eight per cent. in the other.

Again, if we add to each blood, as soon as it is withdrawn, an equal quantity of starch, we find that six times less sugar is produced in the blood of the mutilated dog than in that of the normal animal; which shows, of course, that the latter's blood is much more rich in ferment.

Drs. Arthaud and Butte have also undertaken a series of experiments on this subject, to determine the reason that the total extirpation of the pancreas brings on glycosuria, as was first indicated by Drs. Minkowski and von Mering.

The first hypothesis previously advanced is, that if the pancreas is removed, the elimination of the pancreatic diastase which is usually contained in the blood fails to take place, it is retained in the organism, and augments the transformation of the reserve of glycogen. To control this fact, Arthaud and Butte have made injections of either vegetable diastase or macerated pancreas, but have never observed glycosuria to follow; hence one cannot admit the accumulation in the organism of a diastase capable of producing glucose.

These authors also reject the opinion of Lépine, who says that the pancreas yields to the blood a ferment capable of destroying the sugar in the economy; if the pancreas is removed, the ferment which destroys the sugar disappears, and we have glycosuria. In an experiment, during which they ligated almost all the veins of the pancreas in a dog, the urine was not found to contain an increased amount of sugar, which phenomenon

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should have been observed if the pancreas excreted, by its veins, a ferment capable of destroying the sugar in the organism.

MM. Arthaud and Butte, having observed in their experiments that in every case of glycosuria there was a constant lesion—namely, a dilatation of the hepatic arterial system—thought that the glycosuria might be due to an increase of the hepatic circulation, on account of the suppression of an important collateral circulation. To establish this fact, they ligated the different branches of the cœliac axis of a dog, excepting the terminal branch of the hepatic artery; the animal died at the end of three months, and sugar was always found in his urine. The naked-eye appearance of the pancreas showed no alteration, which is not astonishing, as the arterial circulation had been reëstablished in this gland by the mesenteric artery which had not been ligated.

Dr. de Grandchamps has used hypnotism in one of his hospital obstetric cases, with most gratifying result. The patient was a girl, seventeen years of age, with no signs of hysteria. She presented herself at the hospital in the fifth month of her pregnancy. Dr. de Grandchamps thought of preparing the patient beforehand, so that he might fully hypnotize her when labor came on. She was easily hypnotized at the first *séance*, and Dr. de Grandchamps repeated the hypnotization two or three times every week, with great benefit to the patient, who was very anæmic. She rapidly recovered her health, her cheeks became red, and her appetite and sleep perfect. Finally, labor began; the dilatation of the neck was complete. As in every labor, the contractions were most painful to the patient, as indicated by her loud cries. In the quiet moment following a contraction, Dr. de Grandchamps rapidly hypnotized the patient, and suggested to her to bear down when the contractions came on, but that she would feel no more pain. From this moment the contractions became very strong, but the patient did not utter the least cry or sound. After awhile, the doctor, desiring to increase the rapidity of the labor and to regulate the contractions, commanded the patient to bear down every minute. The order was obeyed, and every minute a contraction took place, followed by a period of repose. This methodical bearing-down soon brought the head to the vulva, and, as she was a primipara, fearing a too hasty expulsion, the order was given her to bear down no longer. From this moment the movements stopped, and the head and trunk came out slowly, without active intervention on her part. A quarter of an hour after her delivery this young woman awakened, and could not believe that she had been delivered.

A very interesting case of ambulatatory automatism, first described by Charcot, has occurred in the practice of Professor Prourt.

The patient is a man, thirty-three years of age, son of a nervous and inebriate father, mother also nervous; he has a brother deficient in intellect. The patient, however, is very intelligent, well educated, and one of the lawyers of Paris. He presents unmistakable signs of hysteria, and he can be very easily hypnotized. Professor Luys, who has treated him, found that a loud noise would immediately throw him into this hypnotic state. On one occasion he fell into the hypnotic state in the street from glancing at a mirror. On another occasion, while pleading in a court of law, the president looking at him, he suddenly fell asleep, stopped his discourse, and was only able to resume it when a friend had awakened him.

At other times his memory is completely lost; he entirely forgets his past existence and his own personality, but during this state a sort of new life begins for him, and a new memory and individuality are established. He walks, travels on railroads, makes social visits, and, finally, suddenly returns to his normal state, forgetting all that has taken place.

After a violent discussion on the 23d of September, he lost his memory until the middle of October; he does not know what he has done, how he has lived, where he has been. In the middle of October he found himself in a village at some distance from Paris, and then came back to his normal state. During that time, he discovered later, he had contracted debts for over one hundred dollars; and, having stolen money, he was condemned for theft by a court of law.

This is a clear case of ambulatory automatism, and shows:

First, a suspension in the continuity of consciousness although the individual is able to conduct himself as in ordinary life and without attracting attention.

Second, if there exists a discontinuity between the phenomena of consciousness of the secondary condition and those of normal life, there is, on the contrary, a continuity of consciousness between the periods of this secondary condition—for instance, this patient in his normal state ignores what he has done during the periods of ambulatory automatism; but if he is placed in the hypnotic state, he enters into this secondary condition, and is then enabled to recollect everything that occurred while previously in that condition. When in the normal state he is unable to recollect what he did between September 23d and October 15th; when hypnotized, he tells the details of his life during that period.

At a recent meeting of the Academy of Medicine, Dr. Lucas Championnière read an interesting communication on the treatment of fracture of the patella by opening the knee-joint and wiring the fragments. The observations included fourteen cases of patellar fractures, four being old fractures, and nine recent, and in one case the patella was intentionally ruptured on account of vicious union. The operations for the recent fractures were made between the first and twelfth day; two were made less than twenty-four hours after the fracture, and one less than twelve hours after. Rapid intervention is always advisable. The articulation is well cleansed, and, after having removed splinters of bone, the patella is sutured by means of two wires passed through the middle. The parts surrounding the articulation are drained with care, as there is always more or less effusion. Finally, he places the limb in a splint for eight days, after having dressed the wound. The limb is not kept completely immovable. It is only between twenty and twenty-five days after the operation that the patient is allowed to walk, and it is surprising to note how rapidly he is enabled to do so. In recent fractures osseous union is positive, as it is quite impossible to find an interval between the fragments, and one can feel the wires through the skin.

The patella becomes very strong, and when the patient is cured no appreciable difference will be found

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between the diseased and healthy limb, and this result is permanent. No other treatment will allow a patient to walk perfectly within six weeks or two months.

When the ordinary methods of treatment have been used previous to the operative intervention the results are not so favorable; out of five cases, a perfect union was obtained in two, but in three other cases the separation between the fragments was not completely obliterated, though the silver wires were retained in position.

This operation must, of course, be done under the strictest antiseptic precautions, and strong silver wire should be employed. Dr. Championnière especially insists on the importance of not rendering the articulation immovable after the operation.

VIENNA.

To the Editor of THE MEDICAL NEWS,

SIR: The treatment of tabes dorsalis has attracted a good deal of attention here lately, following the French experiments of suspending the patient and trying to influence the sclerosis by stretching the spinal cord. No one knows how any effect can be produced, but it is certain that some slight improvement takes place, probably because the hopes of the patient are revived by complicated machinery. It has been tried here, but, just as pathologists predicted, with no other results. Hardly a week passes without our seeing a new case of the disease in Nothnagel's wards. Erb has been studying its etiology, and from an experience in several hundred cases, has proven that ninety per cent. of the afflicted are syphilitic. In Nothnagel's wards the same proportion holds, and, judging from this, a very close etiological connection seems to exist between syphilis and tabes. This is further borne out by the experience that potassium iodide and mercury are often beneficial if given early in this disease.

Professor Esmarch, of Kiel, has recently published a new theory which has already received support from such men as Czerny and Albert. According to Esmarch, there has been so much syphilis among the lower classes in Europe that has not been thoroughly treated, that by heredity nearly all the population have some of the virus in their blood, but in such attenuation that it causes few acute symptoms. Now, in a very large number of tumors that resemble sarcoma almost exactly, microscopic examination fails to show the characteristic cells of this neoplasm, but does give the appearances peculiar to gummata. In most cases where this occurred in Esmarch's extensive practice, he declined to remove the growth by operation, but used inunctions of mercury and general anti-syphilitic treatment. To his great surprise, he was remarkably successful in this method. He first used the method only in cases where an operation was impossible; he then applied it to less advanced cases, and gradually formulated his ideas until now he says that many cases of apparent sarcomata are really gummata, and curable by antisyphilitic treatment. In sarcoma, when operation is no longer practicable, Albert uses deep injections into the tumor of Fowler's solution. Beginning with one drop, he gradually increases to thirty drops daily, and then gradually diminishes the dose. For an hour or two after the deep injection the patient has severe chills and high temperature, an intense itching in the skin, and signs of collapse; but these symptoms soon disappear, and are followed by a long period of perfect ease. I have seen the size of the growths diminishing decidedly with this treatment, but, of course, it is only a palliative measure.

One of the most remarkable cases of heart malformation on record was shown at Nothnagel's clinic lately. A boy of eight years had been in the hospital for several months, with a diagnosis of "pulmonary stenosis and communication between right and left ventricles." The boy died from pulmonary hæmorrhage, and at the post-mortem was found the following: The left auricle opened normally into the left ventricle; the right auricle also opened into the left ventricle, but there was no communication between the right auricle and right ventricle; from the left ventricle the mixed blood from both auricles was sent to the aorta and also through an opening into the right ventricle, and thence into the pulmonary artery. The left ventricle was large, its walls hypertrophied, and it had four valves: one from each auricle, one to the aorta, and one to the right ventricle. The right ventricle was very small, and seemed to be a mere antechamber to the pulmonary artery; it had no communication with the right auricle. There was stenosis at the pulmonary artery. Owing to the mixed character of the blood, the boy always looked intensely cyanotic; his skin was cold and clammy, and his temperature always a degree or two below normal.

The excruciating pains of tic douloureux have given rise to great variety of treatment, illustrating the adage that "the more remedies the less cure." Fränkel has now a new plan which he claims is superior to all others. He gives a hypodermic injection of cocaine in the affected place, and then applies the strongest current of faradic electricity the patient can bear, placing one pole at the foramen of exit, and the other on the course of the nerve about half an inch distant. Without the cocaine the current could not be applied strong enough. There have been excellent results in the cases we have seen, and the method certainly deserves further trial.

Cirrhosis of the liver is a common trouble in Austria, and innumerable remedies have been used for its relief. In the University clinics they now prefer calomel given by the Russian method—*i. e.*, one-half to one grain daily. It promotes diuresis, and by this means probably reduces the ascites. They also give it in cases of hepatic enlargement from passive hyperæmia, where it does excellent service. There is an evident current in professional opinion here that is limiting the number of medicines ordinarily used. It is rare to see a prescription from the professors here that contains more than two or three ingredients. Simplicity in therapeutics is the password, and the day of the "shotgun prescription" is evidently past. The great University here has but one Professor of Materia Medica, while all the other departments have numerous representatives. The study seems to tend toward pathology more than in any other direction. From a knowledge of the changes produced by disease they are striving to discover how to prevent and how to cure. Every case that dies in the hospital is examined most thoroughly post-mortem, and four skilled pathologists attend to this work. Thus there is always proof of correctness or mistake in diagnosis, and the diagnosticians are constantly held to facts, and reminded of their fail-

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ures, so that every error is a lesson of great value. It is because of this system that the Vienna clinicians have such a reputation in diagnosis—they never fall into errors without the constant influence of pathology bringing them back to facts.

A few days ago, Dr. Rosthorn, assistant at Professor Chrobak's gynecological clinic, operated on a case of apparent ovarian cyst. Eight weeks before, the woman had been delivered of an eight months' child, normal labor, and had been perfectly well until three weeks previous to the operation. The operation was made in the ordinary way, and the supposed cyst removed. At one portion of it a peculiar cord-like process was attached. Rosthorn examined the other ovary—it was normal—but, while examining it, a small hand slipped out from between the intestines. This was seized, and a full-sized child was removed from the abdomen, and to its umbilicus was attached a cord exactly similar to that found on the cyst. They then looked for the fœtal membranes, and found them very deep and everywhere adherent to the intestines and peritoneum. The child's skin was nearly normal, though slightly macerated. Then the membranous sac was brought up and sewed to the peritoneum, just as the stump is treated in extra-peritoneal amputation of the uterus; the abdominal walls were united, and the sac dusted with salicyl-tannin. The woman rallied, and now, seven days after the operation, is doing very well. The careful examination of the removed cyst showed that the tumor was merely the placenta coiled up where it had been fastened to the left Fallopian tube, and the case now resolves itself as follows: There was an extra-uterine pregnancy, with the fœtus in the left Fallopian tube, and this fœtus was carried beyond term, and died. Throughout the time there were no symptoms from this extra-uterine pregnancy, and an intra-uterine pregnancy went on nearly normally at the same time. It cannot be established, though it is probable, according to the authorities here, that the two children were really twins, and one developed within, the other outside of, the uterus. Thus it stands without a parallel in the history of obstetrics, and the full report by Rosthorn will be looked forward to with great interest.

Bacteriological investigation goes on constantly with undiminished vigor, and at last the subject of malaria seems settled. It is taught here that the plasmodium malariæ is the cause, that it enters the blood, taking up its abode in the red corpuscles, and gradually growing therein. At first it is very small, one-fifth the size of the corpuscle, but as it grows it takes up pigment, which is deposited in small granules in its periphery. It grows until it completely fills the corpuscle, and then it divides into a number of daughter cells that repeat the same process, and at the division the pigment granules are set free in the blood, causing the well-known *melanosis malariæ*. There is very little malaria in Vienna, but Dr. Bamburger, Nothnagel's first assistant, told us that in every case they succeeded in finding the plasmodium. The use of quinine diminishes the number of the organisms very markedly, and in case of cure they can no longer be found. They are also more numerous just before the chill, and immediately afterward are hard to find, for then the division has taken place, and the small cells escape observation far more easily. Golgi, an Italian pathologist, has written an excellent monograph on this subject.

Professor Rosenthal, the author of a work on nervous diseases, died here a few weeks ago, a victim to the influenza. Professor Albert is very ill at the present time, from some throat trouble, and Docent Hochenegg is filling the chair during his chief's absence.

In the last few years there have been twelve Cæsarean sections in Chrobak's clinics; they were all made after the Porro method, and in no case was child or mother lost. In the last thirty cases of uterine fibroids removed by the extra-peritoneal method of amputation there were but three deaths, and the mortality in simple ovariotomy has been reduced to almost *nil*. The most thorough antiseptic precautions are observed here, and to this are attributed these wonderful results.

LONDON.

The Late Sir William Gull; The Study of Infectious Diseases; The Chloroform Commission; The Re-constitution of the University of London.

To the Editor of THE MEDICAL NEWS,

SIR: The death of Sir William Gull has removed from our midst one who has occupied for the past quarter of a century the most prominent place in medicine, though for the last two years, since a slight cerebral attack, he had been unable to engage in practice. Sir William Gull's great reputation and success were earned by most assiduous clinical work in his younger days. For fifteen years he lived practically, if not actually, in Guy's Hospital, and devoted himself entirely to clinical medicine and pathology, and his writings in the well-known annual reports of this hospital are a sufficient proof that he made the most of his opportunities. I have heard regrets that he never wrote a book; but book-makers are not, as a rule, the people who do good original work, but rather those who know how to assimilate the work of others, and Gull's work will undoubtedly live and undergo this process of assimilation. Had it not been for the failure of his health, there can, I think, be little doubt that he would have attained to the highest distinction open to a physician, viz., the presidency of the College of Physicians, when Sir William Jenner retired some two years ago; but, unfortunately for him, his working days were then already over. It is pretty generally believed that had it not been for his incessant care the Prince of Wales would not have pulled through the very severe attack of typhoid fever which imperiled his life about eighteen years ago.

In my last letter I alluded to the steps that were being taken to afford facilities for the study of infectious diseases in London. I am happy to be able to report that the negotiations that were then in progress have been brought to a most successful issue, and the details of the scheme by which the fever hospitals of the Metropolitan Asylums Board were laid before the College of Physicians at the last meeting, and unanimously approved. It will mean, no doubt, a prolongation of the medical student's career, but except on the score of expense, there is nothing to be said against it. At present, the study of these diseases is not compulsory, but, no doubt, many students will not be slow to avail themselves of the much

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desired opportunity for becoming familiar with measles, scarlet fever, *et hoc genus omne*, before venturing into practice on their own account, and in a few years it is quite likely that we shall find that a three months' clerkship at a fever hospital is a *sine qua non*.

Dr. Lauder Brunton has returned from his chloroform experiment expedition in India, and has published the results of his investigations in the *Lancet*, and also in a paper read before the Medical Society at its last meeting. He tells us that chloroform and ether act in the same way; that both paralyze the respiratory centre before the heart; that if you push one or the other after the respiratory centre has ceased to act, then you paralyze the heart; and that chloroform is a more potent remedy than ether, and will paralyze the respiratory centre and stop the heart earlier than ether. The chief conclusion is, that death from chloroform is due to asphyxia, and that where deaths occurred under such circumstances, they were due to imperfect observation of the respiration; his advice, therefore, is that more attention should be paid during the administration of chloroform to the condition of respiration.

The vexed question of an attainable medical degree for London students is again being agitated. A Royal Commission sat on the subject, and made certain suggestions to the existing University of London, and the senate of that body in their praiseworthy endeavor to meet the views of the Commissioners have issued a scheme of modifications to overcome the existing difficulties, which are admitted on all sides. There are, of course, many who are discontented with the proposals. Hitherto the University of London has been a university only in name; in fact it has been nothing more than a huge machine for examining men, and it has done its work efficiently enough by the standard which it has set, but its rules have been so exclusive that unless a boy decided, whilst still in his teens, that he would endeavor to obtain the degree, it has been almost impossible for him to do so afterward. The preliminary examination which must be passed has blocked the way, and when a student has begun the real work of his profession, he can but rarely afford the necessary time to begin again and pass a preliminary examination. I confess I do not quite see why we may not have an entirely new teaching university here. The population of London alone is almost as great as that of Ireland, where there are three universities, and it is greater than that of Scotland, where there are four; but at present the minds of all are engaged in endeavoring to mould the existing university into something that will do all that is required. I am doubtful if success will be attained, as there are many interests which at present show no symptoms of conciliation. A conclusion must, however, be arrived at before long, as the Commissioners gave the University only one year to consider whether it would make the needful changes, and not a small part of the year has already elapsed without any definite result having been reached.

NEWS ITEMS.

The Boston City Hospital.—The new out-patient building of the Boston Hospital is now occupied. The Home for Convalescents at Dorchester will next be erected, $30,000 having been appropriated by the Common Council for that purpose. The Hospital also needs a new building for its medical and patients' libraries, with a dining room for the house staff. For this addition $18,000 has been asked.

The Price of Quinine.—Contrary to the expectations of many, the enormous consumption of quinine resulting from the pandemic influenza, has not greatly enhanced the price of the drug. A late London trade circular shows that in Mincing Lane the increase has not been more than a halfpenny per ounce. The offerings of cinchona in the market at each fortnightly auction have been so full and regular that the price of the manufactured article could not be materially advanced.

The Modern American Physique.—Dr. J. B. Hamilton, of the Marine Hospital Service, recently delivered an address before the Georgetown Medical College upon the physical culture of ancient and modern times, in the course of which he is said to have made a generalization to the effect that not one-third part of our American population of the military age could pass the physical examination of the recruit.

Starling Medical College.—The forty-third session of Starling Medical College, Columbus, O., closed with appropriate commencement exercises Thursday evening, March 6th, graduating thirty-nine men. During the past term the attendance was larger than it has been since 1852.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 4 TO MARCH 10, 1890.

KIMBALL, J. P., *Major and Surgeon.*—Is granted leave of absence for twenty days.—Par. 1, *S. O. 25, Department of the Missouri.*

HOFF, J. VAN R., *Captain and Assistant Surgeon.*—Is granted leave of absence for one month.—Par. 1, *S. O. 26, Headquarters Department of the Missouri, Fort Leavenworth, Kansas*, March 5, 1890.

MORRIS, EDWARD R., *First Lieutenant and Assistant Surgeon* (Fort Shaw, Montana).—Is granted leave of absence for one month.—Par. 1, *S. O. 28, Headquarters Department of Dakota, St. Paul, Minnesota*, March 7, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING MARCH 8, 1890.

SCHOFIELD, W. K., *Medical Inspector.*—Ordered for examination preliminary to promotion to Medical Director.

MCMURTRIE, D., *Surgeon.*—Ordered for examination preliminary to promotion to Medical Inspector.

GATES, MANLEY F., *Assistant Surgeon.*—Detached from the Navy Yard, League Island, and ordered to the U. S. S. "Kearsarge."

HARRIS, H. N. T., *Assistant Surgeon.*—Detached from the U. S. S. "Kearsarge," and ordered home.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL LECTURES.

THE PATH OF MOTOR AND SENSORY REINFORCEMENT.

Abstract of a Clinical Lecture delivered at the Infirmary for Nervous Diseases of the Orthopædic Hospital.

BY S. WEIR MITCHELL, M.D.

[Reported by GUY HINSDALE, M.D., Assistant Physician to the Hospital.]

SINCE the discovery, by Dr. Morris J. Lewis and myself, of sensory reinforcements, and our amplification of Jendrássik's discovery of motor reinforcements, I have been on the watch for chances of studying the tracks followed by the impulses aroused by these agencies. Opportunities for useful examinations of the tracks of reinforcements are, of necessity, rare, and, perhaps, some may have been neglected, because neurologists, as yet, have hardly realized the importance of this new means of examining the state of the muscle-reflexes. Moreover, until it is surely made clear as to whether reinforcements are explicable by, or due to, "overflow," or to releases from inhibitory controls, all distinct applicatory explanation becomes difficult. Facts must accumulate, and we must look largely to the laboratory for a solution of much that is yet obscure. Every use, however, has not been made of clinical chances, and I shall, in closing, point out what these are.

The case here presented is a contribution to the symptomatic study of reinforcements and of some minor points in a case of spastic paraplegia, in which both spasm and palsy are perfectly represented. The case seems to me so important that I give it in unusual detail, as follows:

Mrs. C., American, aged thirty-seven. Family history: Her father is living and has chronic rheumatism quite severely; mother living and in good health; all other family history is negative.

Personal history: She was married at the age of twenty-eight; her husband is still alive and has never had syphilis. She began to menstruate at the age of fourteen, but has been irregular, often menstruating at periods of three weeks and in excessive amounts.

She has had but one child, which had to be delivered by instruments at the end of a labor of eighteen hours' duration. This child was weak and puny, and was nursed at the breast until two years old. It has since died at the age of five years. Mrs. C. has had the usual diseases of childhood, and typhoid fever when quite young.

Three years ago she was thrown from a horse, sustaining no special injury, and had no sequence except the soreness consequent upon the fall. She has been occupied by housekeeping duties, and was much out of doors.

On the second right upper incisor there is a very faint blue appearance in the gum. On the opposite side of the lower jaw there is a similar appearance, but still more doubtful. The water-supply of the town in which she lives comes from the mountains and is stored in cisterns. She says there is no lead in any way connected with this water-supply, nor does she know of any means by which lead could have been taken into the system. There was none found in the urine. Her duties bear no relation to her present indisposition. Her habits are all good. The date of her present trouble is indefinite, but, so far as she knows, it was nine and one-half years ago that, in consequence of feeling awkward as to motion, it became unusually difficult for her to walk a straight line.

Eleven years ago the right leg was, for a time, slightly numb, and for this she received electrical treatment and made a fair recovery.

Seven years ago she had a burning pain in the lower part of the back. Before the onset of this pain she could go about, but only to a limited extent, and she was then confined to her bed for four months. On getting up again she could not walk at all, except with assistance. During this period there was no pain in the legs.

Five years ago she had two congestive chills in no way affecting the condition of the legs.

Three years ago, under the scapula and in other portions of her back, she had a sensation as though a boil were present.

A year or so ago, slight sciatic pains were present at times, with a like pain posterior to the inner malleolus.

During the summer of 1888, she had an attack of severe shooting pains around the thigh and along the sciatics. She then had hyperæsthesia of the skin and had the leg protected by down pillows, so painful was every touch. This spell lasted one week. When attempting to walk, her feet seemed to stick to the floor. She could not walk at all in the dark, and she had a sensation as though she must watch every step; but this sensation has gone. Numbness is not a prominent symptom, only occurring after the leg has been hanging for a time. For the last year she has not been able to walk, and has now lost all power of leg motion when lying down, being then unable to stir any part of the lower limbs. A year ago she was better at times, but the improvement lasted only for short periods. The disease showed throughout a gradual increase.

Present condition: The hair is brown, the skin dark, and shows no signs of eruption. The legs are slightly œdematous. The teeth are good, with no changes except the suspicious blue line as above noticed. The tongue presents a light coat, though this is not always present. Appetite is good; digestion is fairly natural. The bowels are regular. Rectum not examined. Lungs normal. Pulse is regular, 64 per minute; not very full. Arterial tension not increased. Blood not examined. There are no evidences of disease in the abdominal organs.

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The only clinical symptom present of gynecological importance is too frequent occurrence of menstruation—once in three weeks. The uterus is slightly enlarged, movable, and in good position. No trouble in either broad ligament, and the cervix is quite healthy, with the exception of some few granulations. The uterus is of lax fibre.

Nervous system: Her general intelligence is good. She sleeps well. Her strength is good above the waist. She has a lack of complete control of the bladder, and the urine will sometimes come away suddenly; occasionally there is some dribbling, and the tendency to sudden discharges applies to the rectum also. She has no vertigo, but her station is not good; she cannot stand alone. She cannot walk forward at all, nor can she move a muscle, from the hips down, in either leg. When standing she can move the thighs a little with the psoas muscles. She can walk backward a few steps with full assistance. Her legs are fat and apparently in good condition. The feet are cold now, but sometimes they are warmer. Occasionally tremors occur, which are coarse and rapid and confined to the legs. They first appeared in the right leg five years ago.

Reflexes: Sole +. Epigastric reflex is present.

Tendon- and muscle-jerk: A blow upon the patellar tendon, when the leg is in a semiflexed position, causes markedly increased jerk and so-called spinal epilepsy. Bending the ankle abruptly causes no paradoxical contraction. Bending of either big toe causes contraction of the ankle and of the quadriceps extensor femoris above. At the ankle there is clonus on the slightest flexion. Pricking of the skin of the leg causes immediate reflex motion. Clonus can be had at each knee, with the leg in extension, by pulling at the patella; but it cannot be had when the leg is bent, there being apparently too much tension of the muscles. When the leg rests across a support at the knee, it fails to drop at once, and, on attempting to bend it, is found to present perfectly the "lead-pipe condition;" and, after being held for a time in extension, it slowly falls. Having the knee slightly bent and making the slightest blow with the hammer on the patella, so that no response is obtained, a marked response is obtained by clutching the hands. Both right- and left-hand contractions give this reinforcement, and, likewise, contraction of the muscles of the face. Both Dr. Lewis and myself satisfied ourselves separately as to this point.

No reinforcement can be had by pain, or cold, or heat, applied to the legs or arms. The leg muscles react under the blow of a hammer excessively and very rapidly above and below the knee, and with no local humping. A blow on the gluteal muscles causes violent thigh clonus. Paralysis of the legs is complete. There is no pain present, but on making abrupt extensions pain is marked; and on thus extending the left leg, there is a sharp pain on the outer part of the right thigh.

Touch and localization seem perfect on each side, though the patient thinks that they are rather less perfect on the left side. The sense of pain is normal. There is some confusion in the feet as to temperatures; she distinguishes heat easily, but sometimes mistakes cold for heat. There are no subjective sensations, and no trophic alterations, save slight œdema. There are no hallucinations and no hysterical symptoms whatever. She has no headache. She thinks there is some soreness over the nerve trunks below the knee on deep pressure.

The examination of the eyes by Dr. de Schweinitz is as follows: Pupils act normally; external muscles normal, except some slight insufficiency of internal recti; fundus of each eye normal; only slight retinal haze around edges of the disk. Patient has no asthenopia.

The ears show no changes. The urine is acid and of high color, specific gravity 1031; no albumin; no sugar. Microscopic examination shows a few pus cells, vaginal epithelium, and large crystals of uric acid, which are not very abundant.

All the electrical reactions are normal, and electricity causes no spastic reactions, unless the current is most excessive.

The preceding attacks of pain, numbness, etc., might excite suspicion as to hysterical tendencies, but there were no further, and, indeed, no distinct evidences, and I have rarely seen anyone more free from the obvious personal peculiarities characteristic of hysteria. Her spinal system, however, seems to have been sensitive, and, at last, comes a complete history of lateral sclerosis, with involvement of the direct anterior columns to an extreme degree. We have entire paralysis from the groin downward; excessive spastic conditions; perfect sensation in all forms; no more bladder trouble than some spasticity may cause. The knee-jerk is, of course, in excess. If we excite it feebly, voluntary acts of either hand, or of the face, increase it; therefore, the channels by which reinforcements attain to the ganglia involved are open—not so freely as usual, but distinctly enough. The volitional force cannot reach these centres; the reinforcements can. If we admit "overflow," involuntary tracks are still open to this. Or, if we say with some that a voluntary act releases the concerned spinal ganglia from superior control, the tracks of such influential control must still be open. The problem does not gain in clearness, and I must admit escape of some one band of fibres from the ruin which seems to have fallen on the mass of anterior and lateral fibres.

Not less puzzling is it, in any theoretic point of view, that the sensory reinforcements fail where the motor remain. If we seek explanation of reinforcements in overflow, we must, of course, presume that sensory reinforcement-overflows are somewhere arrested on their way to the motor reflex spinal centres; or, if we insist on the inhibition view, the inhibitions due to sensory impressions must be cut off, so that it is fair to infer that they are nowhere above the level of the said ganglions switched on to motor tracks.

I pointed out in a lecture last spring that in a case of Professor Osler's, of broken back, there was no knee-jerk and no volitional control of the quadriceps, and yet that I could, at least, evolve slight knee-jerk during violent clenching of the hands, and coincident grimace. The will-channel was shut, the reinforcement-channel open.

It has always struck me as most strange that electric movement of muscles was non-reinforcible, and this seemed to me a proof that electrical influence is the most local of all stimulants to muscles. And of this there are other proofs, and none better than the fact that while in these spastic cases a pinch, a pin-prick, almost a mere

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touch, arouses reflex action, considerable electric irritation may fail to do so.

My friend and colleague, Dr. Morris Lewis, has kindly furnished me with the following notes of a case under his care at the Children's Hospital. In this instance, a child, aged seven years, was completely paralyzed as to motion, and partly so as to sensation, but the knee-jerk was reinforced by a grimace or clenching the hands, and also by a pin-prick on the face or hands.

Rose C., aged seven years. Her father had syphilis, but there was no history of phthisis. Previous to her illness Rose had had whooping-cough, croup, measles, and chicken-pox. She seemed perfectly well until June, 1889, when a "hump" was noticed high up in her back. Last July she had a fall, which weakened her back for awhile, but she soon recovered, and played around with other children. On October 2d she had a second fall, which completely disabled her, and she was put to bed. Paralysis of the legs, bladder, and rectum came on immediately after the fall. A fortnight later a bad cough developed, which was worse at night; breathing was rapid and noisy. On October 30th she was admitted to the hospital. Her pulse was 140, and temperature 99°. She had had two convulsions two days previously.

Five days later her general condition was much improved. There was slight knee-jerk present in both legs reinforced by a grimace, clenching the hands, and by a pin-prick. No ankle-clonus. Area of acute sensation above a line drawn around the body about three inches above the umbilicus.

When seen November 3d, the child was breathing entirely with the diaphragm, the respiratory muscles appearing to be completely paralyzed. The lower portion of the chest-walls sank with each respiration, as did also the intercostal spaces.

Ten days after admission knee-jerk was obtained in the right leg after a few trials, though not in the first attempts, reinforced by sensory and voluntary motion. Ankle-clonus absent in both, though obtainable two days previously when the temperature was two degrees lower, viz., 98.4°. The lungs had then cleared, excepting for a few large râles. No dulness anywhere.

There were two decided prominences in the upper dorsal spine apparently belonging to the first and second dorsal vertebræ. Immediately below this prominence there was a lateral curve with convexity to the right. The skin over the prominence was intensely sensitive to heat, more so than the skin elsewhere.

The treatment adopted by Dr. Lewis was at first the use of carbonate of ammonium and digitalis, followed by cod-liver oil and syrup of iodide of iron. Extension in bed was employed; a three-pound weight was attached to a pulley at the foot of the bed, which was slightly elevated. Attempts at extension in the upright position failed, because of the distress to the patient. Now, however, six pounds twice a day for five minutes can be borne, and although sensation has improved immensely and she localizes well, there is no return of motion. Knee-jerk is obtainable with difficulty, and there is reinforcement, though feeble; it is best in left leg. But it is sufficient proof that, though the will-channel is shut, a reinforcement-channel is open, and a pathway of hope for an ultimate cure.

I wish to call your attention to the points of resemblance and of difference in these two cases. In both sensation in the affected limbs is good. In both the will-channel is closed. In the first, motor reinforcement is possible, while sensation failed. In the last case the way for sensory and motor reinforcements is open.

Despite the fact that it is impossible in these cases to say exactly through what tracks reinforcements pass to reach the concerned centres, I am glad to mention such facts as we do know, trusting that other physicians may be more fortunate in seeing cases which will enable them to ascertain with exactness the facts we now desire—that is, the true paths followed by motor and sensory reinforcements.

I have long sought for cases of crushed spine to see if, in absolute isolation of spinal centres, it be possible to obtain by heat or cold mechanically used below the injury any reinforcement of the knee- or ankle-jerk. The chances to see these cases usually fall only to general hospital surgeons, and of late no instance of this accident has been within my reach.

ORIGINAL ARTICLES.

REFLEX NEUROSES.[1]

BY M. ALLEN STARR, M.D., PH.D.,
CLINICAL PROFESSOR OF DISEASES OF THE MIND AND NERVOUS SYSTEM IN THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

THE active part of the nervous system is the gray matter. The white fibres merely carry impulses to and from it. This gray matter is collected into three quite distinct masses: (1) the spinal and medullary centres—*i. e.*, those from which the spinal and cranial nerves arise; (2) the basal ganglia; (3) the cortex. In the entire vertebrate species it is possible to assign to these distinct masses different functions: to the spinal and medullary centres reflex action, to the basal ganglia automatic action, to the cortex conscious and voluntary action. In dealing with reflex disturbance it would, therefore, at first appear that we were to be limited in our discussion to affections of the spinal cord and medullary centres. These must certainly be considered. Yet we are not thus limited. For each lower system is under constant control from the one above it; hence the spinal (reflex) activity being the lowest is dominated both by the basal (automatic) activity and by the cortical (voluntary) activity. Hence, disturbances of reflex action may be brought about by anything which either increases the normal inhibitory action of the higher centres or removes that action, as well as by disease of these reflex centres themselves. A prompt motor response to a sensory stimulus is the action which should normally take place when the reflex centres are called into play. Sneezing, winking, swallowing, coughing, the secretion of alkaline saliva in the mouth, and acid gastric juice in the

[1] Read at the New York Academy of Medicine, March 20, 1890.

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stomach, when any foreign body is put into these cavities, the act of vomiting when that body is an active irritant, or of increased peristalsis of the intestines if the foreign substance reaches it; the flushing of the skin with blood when exposed to changes of temperature, the regular respiratory and cardiac movements, and the vascular tone; these as well as the so-called tendon and skin reflexes are examples of reflex activity. Without such reflex action the balance of supply and demand in the human economy would be impossible and life itself would cease. A power of quick and appropriate response to normal or abnormal irritation is a natural power of the lowest masses of gray matter. I cannot find any evidence from the study of disease that the exercise of this power is in any way detrimental. This power may be interfered with in several ways. Strychnine and its coefficient drugs will increase it. The result is manifest (1) by an unnaturally strong response to a weak irritation; (2) by an abnormally long and continued response to ordinary irritation. The spasms on slight touch and the opisthotonos with rigidity in a guinea-pig poisoned by strychnine are examples of both. In man tetanus furnishes a good illustration; but the extraordinary state of nervous irritation, the starting and jumping at little noises, the flushing on slightest irritation, the cramps produced by heat, the extreme uneasiness and hyperæsthesia present in spinal meningitis are equally good examples of increased reflex activity due to direct irritation. Reflex activity may be suspended by violent and sudden irritation. Injuries to the abdomen or head may arrest all reflex activity and cause death in man as well as in a frog, as described by Goltz. It may be impaired by an excess of moderate irritations coming simultaneously. Just as the conscious attention cannot be given at one time to several subjects and elicit simultaneously appropriate responses to all, so reflex centres may be embarrassed by numerous simultaneous stimuli and fail to react to any one in proper degree. The condition subsequent to severe traumatic concussion is an illustration.

When we seek for illustrations of either increased or decreased reflex excitability from spinal disease it is evident that we must allude to very serious diseases. The reflex mechanism is too important and too stabile to be affected by little irritants, or by slight causes. If it were not, the numerous, inevitable stimuli consequent upon an active life would constantly put that life in danger. How few of the severe accidents which constantly occur really affect in any marked degree the reflex nervous system? How many serious irritations, traumatic, painful, distressing, fail to cause a single spinal nervous symptom? The surgical wards of a hospital offer little field for the observation of reflex nervous disturbance—happily for the inmates. In the lower animals such affections rarely exist.

Turning now to the other cause of disturbance of reflex function, defective control by higher centres, we at once enter upon a broader field. Arrest of reflex activity is rare and needs little consideration. It may be produced voluntarily, as one may prevent the knee-jerk by intention, or inhibit the act of swallowing, as in hysterical dysphagia. It may be produced involuntarily, as when cerebral hæmorrhage inhibits respiratory or cardiac action; or extreme fright causes death in the same way. Increase of reflex activity from central causes is common. The act of control must be constantly exerted in order to preserve the balance of power and the proper harmony of action in the nervous system. Whether we start from a consideration of moral conduct or of the plantar reflex we reach the same conclusion. And in central control a slight defect produces widespread and serious results. A man who has once abused a confidence will not be implicitly trusted, though he lives for a hundred years. A small clot in the brain will set all the motor, vasomotor, and sympathetic centres in such a state of instability as to impair all confidence in their action. A hemiplegic who has apparently recovered still has the increased knee-jerk. This may not in any way impede the action of the reflex centres. That is carried on exactly, accurately, satisfactorily, and its action does no harm. The emptying of the bladder as soon as it is full is a perfectly normal, satisfactory act on the part of the lumbar spinal cord, and active incontinence of urine is not a symptom that it is diseased. It is a symptom that impulses calculated to restrain the act till an appropriate time and place offers are prevented from reaching that normal reflex centre. There must be a proper harmony and succession of reflex acts with some definite order for the nervous system to fulfil its whole duty. And any defect in that order may cause effects which in other conditions would not be defects.

If these patent facts of physiology be accepted, I think we must conclude that in those diseases known as reflex neuroses, in which there is no real defect in reflex action, but only an undue or inharmonious reflex activity, the actual origin of the disease must be either in an excess of activity in the lower centres or a defect of control in the higher centres. As we have seen, an excess of activity is commonly called forth only by very severe causes; while a defective control may come from slight ones. Phenomena comparable to tetanus or strychnine poisoning are rarely, if ever, seen in reflex neuroses. In the various reflex neuroses in which peripheral irritation is the supposed cause of disease, it is my opinion that when peripheral irritation is the actual cause, nature indicates it by attracting attention to the seat of irrita-

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tion by discomfort or by pain.[1] And when, as in very many cases, the source of the irritation is by no means evident, is only found, or supposedly found, by extraordinary effort, the probability is largely in favor of the assumption that the reflex neurosis is not produced by any direct peripheral irritation, but is the manifestation of a slight or serious defect of control by higher centres due to their impaired nutrition and consequent impaired activity.

Theories are attractive, but misleading. Experience is a better guide. In my own experience I am sure that a very large majority of the patients who present symptoms of reflex neuroses have been exposed to influences which undermine the strength and nutrition of the *entire* nervous system, have serious symptoms, not only of a so-called reflex character, but of defective central control; are to be regarded as suffering from functional or organic disease of the highest, most complex, most highly developed portion of the nervous system; and are not merely the victims of irritation in some peripheral organ.

We know that long since the notion of a reflex paralysis—such, for example, as a general paraplegia from a slight wound of the hand—has been abandoned, and these cases are to-day explained more satisfactorily upon the theory of mental shock rather than spinal irritation.[2] That they are rare, must be conceded. Two surgeons of this city, of the largest experience, have told me that they have never seen a case. We are coming rapidly to the notion that the symptoms in the so-called condition of spinal concussion are really due to the same state of mental shock. The highest, most delicate, most easily affected centres of the nervous system, those which are the last to arise in the process of evolution are, as Hughlings-Jackson has pointed out, the first to fail in dissolution, are the easiest affected by sudden and unexpected mental irritation. How else can we explain the fact that, in a railway accident, passengers who are asleep rarely suffer from after-effects? Passengers who are awake suffer the immediate alarm and the subsequent symptoms.

The phenomena of hypnotic suggestion have proved conclusively that many so-called spinal neuroses are really due to defective cerebral control. It is not necessary to call such defect hysteria. Mental shock and mental worry may produce such an unstable state of the highest centres that their inhibitory action is removed, allowing lower centres to manifest unusual activity. In such cases, then, the actual manifestation may perhaps be in a lower centre, but the actual seat of disease is not necessarily there. It is in the higher centre, which controls the lower.

Let us take, for example, a case of so-called uterine reflex neurosis. The irritation from the organ reaches the lower spinal cord. If its centres are really excited to activity, we should expect such symptoms as occur in a spinal meningitis, viz.: hyperæsthesia of the legs and cramps and spasms of the calves, vesical and rectal tenesmus, and active incontinence of urine. But these are not the symptoms found. You do find pain and a dragging sensation in the back. This does not cause any manifestation of true spinal reflex activity. There is no evidence of such activity. It does produce a wearing discomfort, appreciated consciously; received, then, in the highest cerebral centres; exhausting them, and impairing their control over the lower, especially the vaso-motor, centres. Hence the headaches, general nervousness, flushings, feelings of heat, etc., symptoms of general instability of the lower centres, *not* of the lumbar cord centres themselves in particular.[1] It is a mistake to call this a reflex neurosis. It is a general nervous exhaustion, due to a peripheral pain. The actual spinal reflex centres have no part at all, or very little part, if any, in the complex of symptoms.

I think the same is true—*mutatis mutandis*—of eye-strain. Let an eye be actually strained by defective vision, defective accommodation, or muscular asthenopia, and the result is increased winking, watering of the eye, feeling of inability to use it, pain, heavy eyelids, possibly conjunctival hyperæmia; and in an animal under strychnine, nystagmus, or twitching of the ocular muscles—a phenomenon rarely seen in man—never seen, in my experience from the so-called strain of the ocular muscles. Every other muscle in the body, if much over-strained, will become irritable; the knee-jerk can be increased by exercise; the biceps twitches spontaneously after a weight is raised. Who has not felt the tremor of an over-strained set of muscles? Why is it that, in eye-strain of the external ocular muscles, nystagmus is never seen? A serious strain of the intra-ocular tension—such as occurs in astigmatism and hypermetropia—gives rise to discomfort, to voluntary effort to strain the eyes in using, to effects, in other words, upon *not* the centres governing ocular motion, but upon the conscious voluntary centres of the cortex, upon the centres of highest evolution, most delicate, most susceptible to slight effects. The result is cortical exhaustion, similar exactly to that produced by uterine or ovarian pain, or by pain anywhere, or by mental shock or mental worry.

Take, lastly, the so-called reflex convulsions from genital irritation in boys—due to phimosis, or concretions behind the prepuce, or to masturbation.

[1] See Medical Record, Jannary 1, 1890.

[2] Leyden: Reflex Lahmung, Volkmann's Klin. Vorträge, No. 1

[1] Goodell: The Abuse of Uterine Treatment. THE MEDICAL NEWS, December 7, 1889.

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Such convulsions occur only in neurotic children. They are always preceded by mental irritability, they never occur without some evidence of cerebral irritation. It is rarely that any such evidence of spinal irritation, as frequent micturition, or cramps in the calves of the legs, attends them. The irritation, then, is acting upon the entire nervous system. The weakest part yields first. That part is the part which controls the other parts. The child is not suffering from reflex irritation. Irritation at the periphery is the cause only in part; a weak nervous system is the potent predisposing cause. And, unless this be strengthened at the same time that the peripheral irritation is removed, there will be a recurrence of the symptoms from some other apparently trivial cause, and he who treats these will never cure the patient. The same thing is true of genital irritation in adults. Spermatorrhœa, seminal emissions, atrophy of the testicles, exist unnoticed in many persons until attention is called to them, the mind dwells on them, the higher conscious emotional nervous system is irritated by worry, and then the symptoms of so-called sexual or spinal neurasthenia develop. The trouble is *not* spinal, is *not* reflex, it is cortical. Thus physiological investigation and careful clinical study combine to prove that while peripheral irritation may produce nervous symptoms, it is not directly through the lower centres, it is not by exciting reflex action. It is rather by producing exhaustion of the highest conscious centres which control the entire nervous mechanism. The largest engine is governed by a very small steam crank. A little motion of that will produce very great motion elsewhere. If the engine is whirling itself to destruction, do not attempt to stop the flywheel, do not catch hold of the binding straps, but turn off the steam by the little crank.

In any case of so-called reflex neurosis do not be satisfied by merely removing supposed peripheral irritation, but increase the nutrition of the entire system, give it food and drink, strengthen it by every possible means, baths, exercise, rest; regular, not hurried work in many directions, not in one only; and by tonics, to enable it to exert all its powers of control, and the peripheral effects will disappear of their own accord.

In the presence of a case of neurasthenia with peripheral symptoms, of chorea, or epilepsy, or hysteria, with sources of peripheral irritation present, go back of the apparently important symptoms to those of real causal moment, and the therapeutic results will be more satisfactory and more enduring.

ELECTRICITY IN CHRONIC PELVIC INFLAMMATORY DISEASES.[1]

BY J. M. BALDY, M.D.,
OF PHILADELPHIA.

IT is now some years since Apostoli began to treat inflammatory diseases of the pelvis with electricity. At first under the influence of the older pathology, or, more correctly, lack of pathology, he called these troubles *phlegmon*, *peri-metritis*, *para-metritis*, *cellulitis*, and by other familiar misnomers.

To-day he recognizes these same diseases under more correct names, and says he shall speak no more of peri-metritis, but of salpingo-ovaritis, whether complicating a pelvic peritonitis or not. In order that we may be sure that we are not discussing one condition of pelvic disease and Apostoli another, it may be well in the beginning to make ourselves perfectly clear on this subject. In the *Journal of the American Medical Association*, July 27, 1889, Apostoli says:

"Every salpingo-ovaritis will generally be suitable for the appropriate electrical treatment, and this should be the conservative method of choice; it is sovereign in catarrhal salpingitis, only calmative in tubercular salpingo-ovaritis, and in certain pus tubes may be of great service."

The only variety of salpingo-ovaritis I here wish to discuss is that which I presume he intends his catarrhal salpingitis to represent, for the reason that a pus tube, with the pus drained away, practically resolves itself into an advanced stage of this variety, and, therefore, need not be separately considered. A typical picture of the pathological condition (brought about in several ways) which I have in mind, is as follows: The Fallopian tube thickened and enlarged to two, three, or four times its natural size by inflammatory changes, the tubes cheesy or not as circumstances determine; the fimbriated end destroyed, all traces of the fimbria having disappeared, and a rounded smooth surface presenting in their place, most often with the ovary adherent to it; the ovary and tube displaced to a greater or less degree, generally and firmly adherent; as a rule, the tube is empty. With this condition the patient will present a history of sterility, pain, and general ill-health. A local examination will show, often only to an experienced finger, an enlarged tube going off from one or both sides of the uterine cornua. Sometimes the disease is easily made out by vaginal examination, at other times it is extremely difficult to detect, this difference depending on the amount of disease, the high or low attachment of the appendages, the amount of relaxation of the abdominal and pelvic tissues, and the amount of pain, actual or hysterical, experienced by the

[1] Read before the College ot Physicians of Philadelphia, March 5, 1890.

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patient. That this is one of the conditions treated by Apostoli is evident from his own words:

"It (the electrical treatment) should be continued until the patient pronounces herself cured of her symptoms, and until an examination has satisfied us that the anatomical change is considerable."

He distinctly excludes pyosalpinx and hydrosalpinx in this connection, and dictates that "surgical interference should never be resorted to until after all electrical resources have been exhausted." This is an additional proof that we are considering the same conditions, as no true surgeon attempts, excepting under rare circumstances, to interfere surgically unless the tube is destroyed. So we may consider that Apostoli has in mind just such cases as I have described, when he claims to relieve salpingo-ovaritis. In no part of the numerous contributions of Apostoli can I find that he distinctly claims to remove the organic lesions of a chronic salpingitis, and if any inference may be drawn from expressions bearing indirectly on this point, they are, that he does not pretend to accomplish this much. For instance, in the paper already quoted he cites "two typical cases." The first was under constant treatment for one year or more, the second for over five months. The history and examination of both cases showed that the patients were suffering from pelvic peritonitis, and that behind the peritonitis there existed diseased appendages, such as we are considering. Although he claims these cases as cures, at the end of the treatment in the first case:

"A deep exploration caused rather acute pain in Douglas's pouch. . . . The uterus was found to be slightly adherent to the sacrum. With a deep touch the right ovary could be felt, also the right Fallopian tube."

In the second case:

"On pressure, a slight ovarian pain in the left iliac region was observed; the uterus was normal, very movable laterally, but it could not be lifted without difficulty, on account of the posterior adhesive bands; some prolapse of the annexes, more pronounced on the left, with one tube in the recto-vaginal wall; no signs of salpingo-ovaritis."

From this comment, "no signs of salpingo-ovaritis," it will be clearly seen that Apostoli meant that he had cured the symptoms; that he did not remove the disease will be perfectly evident to any practical surgeon from the description of the local condition at the time of the patient's discharge, presumably cured.

The disciples of Apostoli are not satisfied to accept this ground as the limit of the possibilities of the electrical treatment of these inflammatory diseases, but out-Herod Herod, and make claims which they have utterly failed to substantiate.

Goelet, in a lecture on electricity in gynecology, delivered before the class of the New York Polyclinic (THE MEDICAL NEWS, June 22, 1889), says:

"That in the treatment of these conditions he finds that *exudations and adhesions melt away like ice under the rays of the sun.*"

Massey, in his book on *Electricity in Diseases of Women*, p. 160, says:

"Whenever chronic enlargement exists, a shrinkage to the normal size is an invariable record, and adhesions as well as exudations are generally noted as disappearing."

Lapthorn Smith (*American Journal of Obstetrics*, August, 1889, p. 805) says:

"Those who operate for this condition tell us that they frequently find the ovaries and tubes compressed and bound down by a retracting plastic effusion; but, owing to the stimulation of absorption, these exudations are removed and the ovary is left free."

Many other electricians write in much the same strain. Now it is just this difference between Apostoli and his disciples to which I desire to call attention. Apostoli is by all odds nearest the truth, but even he has gone a little too far, and will undoubtedly in time modify some of his statements. My own position on this subject is quite clear, and is based on a large clinical experience, a by no means small surgical experience, and by a most careful observation for two years or more of the electrician's work in these diseases. By this I mean that I have daily, during that time, stood by the side of experienced electricians, examined the cases when they first came for treatment, examined the patients during its continuance and to the end, and have seen many of them at varying times after they had been pronounced cured or had ceased to come for treatment. In all this time I have failed to observe a single cure of the disease. By this I do not wish to be understood as saying that I have not seen patients relieved of their symptoms and sufferings, for such a statement would not be true. I have observed a number of cases after a protracted course of treatment, during which some of them were at times much worse, become so much better as to express themselves as satisfied with the results; and yet they almost invariably returned with a relapse, or I would accidentally stumble across them in some other clinic seeking if they might not obtain the cure they had failed to obtain from electricity. Again, I have seen patients made worse during and by the treatment, and have on several occasions become cognizant of some of them who have been confined to bed for a week or more with an attack of peritonitis. I have in mind one recent case, who, after three months' treatment, and during the continuance of the treatment, became so afflicted. She came from her bed to me for relief, and refused to go back to electricity. She will be operated on

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shortly. I could add a dozen or more cases who have absolutely refused to try the remedy a second time.

I will not burden my paper with a detailed account of a number of cases, but will satisfy myself with the full account of one case. I think I shall be able with it to bring out all the essential points and prove by it as much as could be done by many such. I have selected this case from a large number of similar failures which have come under my observation:

1. Because it so well represents the class of cases under discussion.

2. Because the treatment extended over so great a length of time (sixteen and one-half months), and the operation was not made until the electricians admitted they could not cure her.

3. Because she was treated by Dr. Massey himself, a gentleman who is quoted as an expert in this method of treatment, and therefore the failure cannot be attributed to a faulty application.

4. Because we can so accurately study the different steps of the disease and treatment during its course, and have been enabled to verify all our conclusions, and demonstrate the results with the specimens in our hands.

The case stands as an excellent type of all its kind, and the results of treatment of the kind will always be the same. The cases quoted from Apostoli's paper will be found to result in the same manner if they are followed up.

In Dr. Massey's book on *Electricity in the Diseases of Women* (Case XVI., pp. 161, 162) the case to which I would direct your attention is reported, and in order that I may not be tempted to exaggerate the patient's symptoms, I will quote the report verbatim:

"E. C., aged twenty-six years, married, a native of Poland, was referred by Dr. Bradford, Sept. 27, 1888. She had had three children and one miscarriage, the last pregnancy four years ago, since which time she had been in continuous pain, and had grown progressively worse. For the last four weeks she had been particularly bad, a sanguineous discharge having been constant. There is absolute dyspareunia, and any jar causes intense pain. Menstruation has been regular, normal in amount, attended with severe exacerbations of pain, followed by scanty yellow leucorrhœa. Examination shows uterus enlarged, somewhat anteflexed, and with fundus displaced to the right. Sound enters three inches with difficulty, producing excruciating pain. To the left of the fundus a mass is made out, consisting, apparently, of the ovary bound down by adhesions. The patient's physiognomy indicated intense suffering at every step."

From September 27th until November 13th, a period of about a month and a half, this patient was treated with electricity. Her condition at the end of that time is noted in the above quoted book (p. 163) as follows:

"Uterus measures two and a half inches, with fundus somewhat to right. The mass to the left is scarcely discernible, and the ovary can be detected higher up. Still under treatment."

In a letter written by Dr. Massey, in answer to a criticism on his book, in the *Annals of Gynecology*, August, 1889 (p. 528), he again referred to this case, and I here reproduce what he said at that time (eight months after the first report of the case); the case having in the meantime been under pretty constant treatment:

"The critic's oracular statement, 'that any attempt to melt away pelvic adhesions and indurations, other than simple congestion,' by electricity 'is futile and harmful,' is somewhat wide of the mark. No one attempts to melt these adhesions by the direct polar action of the current as they evidently suppose. The methods adopted include the morbid products within the interpolar zone of a galvanic current, and by cataphoric action promote their absorption. This treatment is necessarily tedious in many cases, but, if faithfully pursued, will lead often to most brilliant results. The ultimate result in Case XVI., in which there was a prolapsed ovary surrounded by exquisitely sensitive adhesions and indurations of four years' duration, is an excellent illustration of this fact, but was not related in the work, as the patient was still under treatment at the date of going to press. This patient had declined operation at the hands of one of the critics, and during the electrical treatment at the Pennsylvania Hospital was repeatedly examined by competent surgeons, who predicted failure. She has now been in the enjoyment of perfect health for some months, discharging fully all duties to her husband and children, even to doing the family washing. This case deserves particular mention, as it was the subject of sceptical criticisms at one of the medical societies while the treatment was in progress."

Within a few weeks after the above report the patient was back with a return of all her old troubles. After some weeks' treatment she was again discharged as cured, only to return in a short time as bad as ever. In the next few months she had periodical relapses, of which she was relieved at times by electricity, at other times by the ordinary gynecological resources. At the last relapse, Dr. Massey said, that if he did not cure her permanently this time, he would consent to an abdominal section being made. After weeks of electrical treatment—and during its progress she voluntarily came to me stating that she was getting no better, that she could bear her sufferings no longer, and that she would submit to the operation if I would perform it. On Friday, January 17, 1890, with the assistance of Dr. Bradford, and in the presence of half a dozen other gentlemen, I made an abdominal section and removed both tubes and ovaries. The omentum was adherent over the pelvic inlet, and required considerable manipulation to free it. Everything below it was adherent. One tube and ovary were curled up into a mass, and adherent on top of the fundus uteri. On one side there was a subperitoneal cyst containing a few drachms of serum, which was

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ruptured during the manipulation. On the other side the ovary was distended with about half an ounce of bloody fluid. Both tubes were two or three times their natural size, very hard, and indurated. There was no trace of the fimbriated ends in either tube, the fimbria and ovaries being blended into one. The patient made an uninterrupted recovery and went home at the end of two weeks. To-day, over six weeks after the operation, she is without a sign of her old pains. What will be the subsequent benefit to the patient can, of course, be only conjectured, although I have every reason to expect, from past experience and present indications, a permanent cure. However, this is not at all material to the present discussion, my object being to show that *electricity will not cure chronic adhesions and organic disease of the uterine appendages*, rather than to prove that surgery will.

Four years before this patient applied for treatment, she had an attack of post-puerperal trouble, which resulted in an occlusion and destruction of both tubes, a general adhesion of all the contiguous pelvic serous surfaces, and was possibly the starting-point of the ovarian cystic disease. Whether there was pus in the tubes originally, I know not; there was none when she first came for treatment, and none at the time of the operation. With the exception of the pus, the tubes look in all respects like pus-tubes, and are in just such a condition as pus-tubes after the pus has been evacuated. The post-puerperal trouble finally subsided, leaving the appendages destroyed and adherent. After a lapse of time, owing to some indiscretion or exposure, an attack of pelvic peritonitis was set up as a complication. These attacks were repeated and became worse, and during one of them she made us her first visit. This was in September, 1888. After about five or six months' treatment, during which she was distinctly worse at times, she obtained relief, and was discharged cured, and was so reported by Dr. Massey in his letter to the *Annals of Gynecology*, August, 1889. She remained well for a number of months, and then, owing to another indiscretion or exposure, was attacked by another pelvic peritonitis. She remained well for only a few weeks this time, and then had repeated attacks at short intervals, until, finally, after sixteen and a half months, she was so worn out that she asked for an operation, which she had at first refused. During all this time her original disease (chronic adherent salpingitis) remained, and was in no wise affected by the treatment, unless it was made worse. I say made worse, because her old family physician, Dr. Raynor, examined her a week before the operation, and states that the disease was markedly worse than when he last saw her, one year and a half previously, since when she had been almost continually under electrical treatment.

What did the operation show? A condition of disease and adhesions which demonstrated most positively and conclusively that "the methods adopted" for her relief did not "include the morbid products within the interpolar zone of a galvanic current, and by cataphoric action promote their absorption," as was claimed. It proves beyond dispute, that not an adhesion was disturbed, and that the tubes themselves had not even begun to show any alteration for the better. There was the disease, and there it stayed. If the local disease was as bad as ever, what, then, happened to give her that interval of several months of apparent cure? As I said before, she had had repeated attacks of acute pelvic peritonitis complicating the chronic organic disease. It was the acute peritonitis which was relieved, but which just as surely came back on the slightest provocation. Now, this is just the point which I wish to emphasize. Electricity, properly and carefully applied, will in time relieve the pain of the pelvic peritonitis, but under no circumstances can it influence for the better the resultant chronic adherent salpingitis of the original attack. The first attack destroys the tubes, and every subsequent attack makes the chronic disease worse. If one is satisfied simply to relieve his patient of the inflammatory attacks as they occur, and to have them keep on returning with repeated sufferings, he can turn to the electrical treatment. He will, however, find this a particularly slow method, and will discover that often he can relieve his patient more quickly by hot water irrigations, glycerin tampons, and the free use of purgatives, combined with other well-known gynecological and general methods. If, on the other hand, he wishes to cure his patient permanently, he must remove the chronic disease which is the cause of the acute or subacute attacks; in other words, he must remove the uterine appendages. There is absolutely nothing short of this, in a certain number of cases, which will accomplish the desired end, and I am sorry to have to confess that this fails only too often.

Many women go for years after the disease has originated before the repeated attacks of peritonitis begin. During this interim the disease seems to remain latent, and does not give unbearable suffering. During this period a moderate amount of ordinary personal hygienic care will keep the woman in comparatively good health, and she may never reach the period of repeated attacks of peritonitis. But, if they once begin, the woman, especially the working-woman, knows few weeks of comfort. As a rule, the danger to life is not great, but the constant suffering is extremely wearing, and the patients do not need much urging to undergo an operation in

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order to obtain relief. At any rate, electricity is absolutely powerless to cure them. The burden of the proof remains with the electricians. If they would convince those of us who have no faith in their methods, they must select their cases carefully, have them examined repeatedly by recognized and competent diagnosticians, and then, when they are through with their treatment, satisfy us that they are actually cured, and not simply relieved. It will not do that they should take a case in one of the periods of pain, relieve her of that pain, and pronounce her cured, even if she has no relapse for some months, or even a year or more. I have observed many of these women who have had their disease for four, five, or more years, and during that time had only two or three attacks of peritonitis. They had been under no kind of treatment whatever, and, therefore, their immunity cannot be attributed to treatment. If, however, this immunity should occur after being relieved by electricity, it would be, and is, claimed as a cure. As a matter of fact, all the cases reported cured by this method have gone on record within a few months after the completion of treatment.

I do not mean to say that all cases of chronic adherent salpingitis should undergo an abdominal section, because I am becoming more and more convinced that entirely too many operations are made for this disease. If a woman is in good circumstances, and can have ordinary hygienic and dietetic care combined with slight medication from time to time, she can, in the majority of cases, live a comfortable life. It is of the minority I speak, when I say that abdominal section is the only cure.

There is one other point on which I would touch. The electricians triumphantly state that when they begin their treatment there is great pain and suffering, large masses can be felt in the pelvis, and that as the symptoms subside under treatment these masses also fade and disappear. Such was the state of affairs in the cases quoted from Apostoli, and also in the case I have reported above. Now what is the explanation of this? With every attack of acute pelvic peritonitis there are large quantities of plastic exudates thrown out, and a vaginal examination gives the impression to the finger of hard, board-like lumps. So often have I mistaken these temporary exudates, which almost always disappear with the subsidence of the inflammation, for large chronically diseased tubes and ovaries, that I now never give a definite and decided opinion until I have had an opportunity to treat the case, and am able to see what is temporary and what permanent trouble. Until this is accomplished, it often takes a very well-trained finger to decide how much actual chronic disease exists. Here is a point of failure with the electricians. They get rid of the acute exudates, relieve the pain, and pronounce the patient cured, only to have them come back, or go elsewhere for treatment. The vast majority of these men are not trained in gynecological examinations, and have never done an abdominal section. I feel most strongly that no man is or will ever become a reliable diagnostician in these diseases until he has had his fingers on the disease both from below through the vagina and from above through the abdominal wall. It is well nigh impossible to gain an accurate knowledge of the condition of affairs in a pelvis ravaged by a septic or specific inflammation without having had one's fingers in a few such pelves and without having attempted to tear out the diseased parts.

What place, then, do I give electricity in the treatment of this class of diseases? Simply that of a therapeutic agent, which will mitigate, but which will never cure. I class it with glycerin, tampons, hot water injections, purgatives, etc., and I consider it the least valuable of them. The relief I have observed from electricity has been exactly what I have obtained from these other remedies, with this difference, that electricity is somewhat slower in its action. However, I must admit that I have seen electricity relieve where I had failed with other remedies, and *vice versa*.

Electricity, I would hold, if I had determined on mere palliation, as a last remedy, for the following reasons:

1. The treatment must be a local one, and must be given by the physician himself.

2. The apparatus is too expensive for any but a specialist to possess.

3. The patient must submit to a prolonged vaginal manipulation several times a week, sometimes for months.

4. It is necessary to remove a great part of the woman's clothing in order to administer the treatment properly and thoroughly.

The absolute failure to cure the disease, which I have shown in the above case, I could easily demonstrate in many others.

328 SOUTH SEVENTEENTH STREET.

TUBERCULAR ULCERATION OF THE INTESTINES.

Report of a Case of Osteitis of the Hip, Dying of General Tuberculosis. No Intestinal Symptoms during Life. Autopsy.[1]

BY V. P. GIBNEY, A.M., M.D.,
SURGEON-IN-CHIEF TO THE HOSPITAL FOR RUPTURED AND CRIPPLED, NEW YORK; PROFESSOR OF ORTHOPÆDIC SURGERY, NEW YORK POLYCLINIC.

THE following autopsy was made on a boy who had been an inmate of the Hospital for Ruptured and Crippled for about eight or nine months. He

[1] Presented at the meeting of the State Medical Society in Albany, February, 1890.

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was admitted for the relief of deformity, resulting from old disease of the hip, tubercular in character. He came from a Western State and was in very fair condition at the time of his admission. It was my intention to do Gant's operation, but on examining more closely I found two or three open sinuses around the upper portion of the thigh, and I determined to postpone the operation, hoping that these sinuses would close. A splint was applied, which protected the joint, and he was soon going about apparently with less deformity. The sinuses continued to discharge, however, and in the latter part of the year 1889 he began to fail, and developed pulmonary tuberculosis. Full notes of his condition and symptoms were kept, and neither the trained nurse nor the house surgeon remembered that there was any diarrhœa or dysentery during his entire stay in the hospital. The examination was made by Dr. Holt, on the 25th of December, fourteen hours after death, and is as follows:

Body much emaciated. Head not examined. Lungs, no adhesions; no fluid in the pleural cavity. Both lungs closely studded with recent miliary tubercles; about one-third of the left upper lobe consolidated. On section, this area shows some cheesy nodules the size of a pin, and two or three minute cavities containing pus. The posterior portion of the upper lobe of the right lung shows a similarly consolidated area of smaller extent, giving a singular appearance upon section, but not quite so far advanced. There are smaller and larger areas of pneumonic consolidation throughout both lungs.

Bronchial glands are enlarged to about one-half inch in diameter; one or two are slightly cheesy; one partly calcareous; none broken down.

Heart: No tubercles on the pericardium; walls and valves normal; recent dark post-mortem clot filling both auricles and ventricles.

Liver slightly fatty; has a mottled appearance; no waxy change shown by iodine test; a few miliary tubercles on the surface.

Spleen slightly enlarged; not very consistent; tubercles upon the surface.

Kidneys normal. Stomach normal; capacity thirty-two ounces.

Small intestine: From above downward large transverse ulcers are present at intervals of two or three feet, the average size being one-half inch wide by one and one-half inches long, oval in shape, some nearly encircling the intestine, deeply excavated, and involving the muscular coats. Edges thickened and reddened, showing an active ulcerative process. Upon the peritoneal surface there is puckering, showing cicatrization; in one or two ulcers this is marked enough to produce a considerable diminution of the lumen of the intestine. In many places miliary tubercles are seen upon the peritoneal surface; no perforations. The largest ulcers are just above the ileocæcal valve; these are one and one-half inches wide and two and one-half inches long, and one surrounds the margin of the valve. There is considerable localized inflammation of the peritoneum covering the intestine in this region, and it is studded with miliary tubercles, the ulcers in almost every case beginning within Peyer's patches. The solitary follicles throughout the small intestine are enlarged to about the size of a pin's head. In the upper part of the small intestine the mucous membrane generally is healthy. In the lower two or three feet there are evidences of quite an intense enteritis, congestion, swelling, and œdema.

Large intestine: Two or three tubercular nodules, reddened, elevated, and broken down, but no ulcers; mucous membrane normal.

Mesenteric glands about one-half inch in diameter; a few are cheesy, and one entirely calcareous.

The diseased hip: Thigh is adducted; trochanter raised; two or three open sinuses on the inner aspect of the upper third of the thigh. The upper six inches of femur with a portion of the pelvis, including the acetabulum, removed. A specimen was then sawn open through the great trochanter and neck and shaft of the bone. The head of the femur was completely disintegrated and absorbed. About one-half of the neck of the femur remains, and thus forms a sort of articulation with what is left of the acetabulum. There is a pathological dislocation; small areas of broken-down osseous tissue are present at the upper and lower borders of the neck of the femur, but the general outline of the hip-joint is almost entirely obliterated. The capsular ligament seems to be intact. The shaft of the bone is healthy; no osteomyelitis. Bacilli very abundant in specimens taken from hip.

CLINICAL MEMORANDA.

MEDICAL.

A Case of Morphine-habit without Injurious Effects.— Divers writers, both lay and professional, have depicted with sufficient eloquence the horrors of the morphine-habit. It has been declared to derange nearly every function of the body; to cause paralysis of the will; to make the truthful mendacious, and much more which is familiar to every student of the subject. These statements have, for the most part, been accepted as the whole truth of the matter, and their universal applicability has not been seriously questioned. Nevertheless, Dr. B. W. Richardson, in the *Asclepiad*, has recently given the details of a case in which a man, sixty years of age, appeared after ten years' use of the drug to have derived therefrom considerable benefit. An equilibrium seemed to be established by the morphine which had hitherto been lacking, and the result was better general health and greater capacity for intellectual work.

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A case even more remarkable has been under my observation for the past eight years. Every possible opportunity has been afforded me to study this case in all its bearings, and to verify every statement. The history is as follows: Mrs. X., widow, aged sixty, has been using morphine for seventeen years. She began its use at the age of forty-three, on account of insomnia, and has gradually increased the dose up to seven grains per day; but during the past year the dose has remained stationary. Notwithstanding her age, her complexion is fresh, her step firm, her carriage erect, her appetite good, and the functions of stomach and bowels perfectly normal. She enjoys seven or eight hours of dreamless and refreshing sleep every night.

Although possessed of considerable property, she is from choice constantly engaged in active labor, and, indeed, accomplishes an almost incredible amount of work without feeling exhausted; in fact, her general health is better now than ever before. Careful observation, aided by a long personal acquaintance, has failed to show any sign of that moral degeneration so strenuously insisted upon by authors. She is especially devoted to charitable work, and is very zealous in religious matters. Her affection for her children and grandchildren is intense, and sacrifices are freely made on their account. In her demeanor she is calm and dignified, and presents no sign of irritability or other mental deterioration. As in the case recorded by Dr. Richardson, she is perfectly satisfied with her present condition, and feels no necessity for reformation.

O. H. MERRILL, M.D.

CORRINNA, MAINE.

SURGICAL.

A Case of Subcoracoid Dislocation of the Right Humerus, and Compound Comminuted Fracture of the Forearm.—The following somewhat unique injury happened when I was on duty as Hospital Steward U. S. A., at Fort Barrancas, Florida. It is of interest, I think, considering the youth of the patient, and the good recovery that took place without any untoward symptom, and it shows very clearly the good results that occur from the simplest treatment for such a grave injury.

On the afternoon of Sunday, the 15th of September, 1889, G. J., a child six years of age, white, was brought to me at the Post Hospital by its mother. I was informed that the child jumped on the car which was used to haul supplies, etc., between the wharf and the post. The mother started to run the car down the track, but the child, becoming frightened, jumped off whilst the car was in motion. In jumping, his foot caught in a loose nail on the floor of the car, and he fell headlong on the track. He partly rolled over on his side, thus saving his head and chest, but one wheel went over his right arm. He was at once picked up and brought to the hospital.

I saw him about twenty minutes after the accident. There were no perceptible signs of shock. Placing him in a chair, and cutting away his shirt, the following injuries were observed: The right arm was hanging by the side, the elbow away from the body, while the inclination of the patient's body was toward the injured limb. Standing behind him with my two hands laid flat on each shoulder, with the forefingers on the acromion, and pressing the other three fingers firmly in under the process, it was at once apparent that the head of the humerus was not in place, the hollow under the acromion being clearly marked. Further examination showed that the head of the bone was lying under the coracoid process upon the anterior part of the neck of the scapula. In short, it was a well-marked case of subcoracoid dislocation of the humerus. There was a punctured wound about the size of a ten-cent piece, over the brachialis anticus, with slight hæmorrhage, and a compound comminuted fracture of the right forearm. Crepitus could readily be obtained. Careful examination of the head, neck, and chest gave negative results.

There being no medical officer at the post, and knowing that the first and principal indication was to replace the bone in its normal situation as speedily as possible, I proceeded to do so. No anæsthetic was given, as I considered that I was not justified in taking that responsibility without skilled medical attendance. I had four ways in which to reduce the dislocation: First, by the heel in the axilla; second, by the knee; third, by drawing the arm upward; and, fourth, by manipulation; and, after some thought, I choose the fourth method, my reason being that no violence whatever should be used, and, further, that this operation was not as painful as the other three must of necessity be. The patient being still seated in the chair, I flexed his elbow to a right angle and pressed it inward toward his chest; then, holding the elbow in one hand, and using the forearm as a lever, I rotated it gently and steadily outward till a distinct sense of resistance was felt. The arm was then raised with a slight inclination inward, and the hand was placed on the opposite shoulder, by which means a movement of rotation was given to the humerus. The plan was successful, and the bone slipped into place. The child was now laid on a bed, and a probe—thoroughly disinfected—was passed into the wound and the bone distinctly felt. From the direction of the probe I was afraid that the brachial artery might have been injured; after-circumstances, however, did not bear out this idea. A piece of lint spread with vaseline was placed over the wound, from which all hæmorrhage had ceased. An internal splint was applied, reaching from the axilla to the wrist, and two short pasteboard splints to the other three sides of the limb, care being taken not to press upon the axillary vein. Cotton batting was so arranged as to protect the inner condyle. Thinking that swelling and inflammation would certainly supervene, I considered it best to remove the vaseline dressing, and keep the forearm and shoulder under strict antiphlogistic treatment, which I did with lead-water and laudanum, a window being left in the splint for that purpose.

The child did well during the night. The temperature was normal, pulse 100.

On the 17th the condition of the little patient was excellent; very little inflammation: temperature normal; did not complain very much of pain.

On the 18th the old splint was removed, and a new one, made from perforated felt, applied. The lead-and-opium wash was discontinued. The wound in the forearm was dusted with calomel, and the whole covered with three thicknesses of carbolated gauze. Bandages soaked in silicate of sodium enclosed the whole.

On the 30th the patient was doing well; an angular

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splint was applied, and he returned to his home, about three-fourths of a mile distant, to which he walked without assistance.

I saw him again in November last. There were no signs of deformity anywhere, except that there was about half an inch shortening. He could use each arm equally well.

Erichsen, in his *Surgery*, vol. i. p. 561, says that "in children under puberty dislocation of the head of the humerus scarcely ever occurs."

The main difficulty was found in keeping so young a patient in one position for over fifteen days, and the constant supervision and watching that were necessary. The services of the mother were worse than useless on account of her hysterical and nervous condition, and, if it had not been for the skilled attendance of one of the hospital corps, the case might have had a very different ending.

HERBERT GRAHAM,
Hospital Steward.
FORT WARREN, BOSTON, MASS.

HOSPITAL NOTES.

ASPIRATION OF KNEE-JOINT; OVARIOTOMY; HYSTERECTOMY; AND OTHER CASES.

Abstract of a Clinical Lecture delivered at the University of Michigan, Ann Arbor.

BY CHARLES B. NANCREDE, M.D.,
PROFESSOR OF SURGERY.

PROFESSOR NANCREDE stated to the class that the undersized youth shown had been the subject of necrosis of both the humerus and femur, but had recovered with a somewhat damaged knee. About two weeks ago he fell, striking the joint severely, which produced an acute synovitis. His physician, not believing in strict antisepsis, had tapped the joint with what he doubtless believed was a clean needle, but one which probably was *surgically* dirty; hence the increase of trouble and the severe pain preventing sleep, even with the free use of morphine. It was doubtful if actual suppuration was present, but tension—one of the chief factors in causing inflammation—was clearly present, and if this were relieved, provided actual suppuration of the joint and consequent commencing destruction had not been initiated, arrest of inflammation and cure would probably result.

The joint was then carefully aspirated, under full antiseptic precautions, the puncture sealed with collodion, and a firm supporting bandage with a splint applied, the lecturer stating that, later, a Martin's elastic bandage would be used if the joint did well. The fluid removed was serum with a certain amount of purulent-looking deposit, which was believed to be composed largely of young endothelial cells and migrated white corpuscles, which were yet alive, and, therefore, not *pus*, strictly speaking, which is composed chiefly of fattily degenerated, dying or dead, cells of similar origin. This condition has been variously termed catarrhal inflammation, purulent arthritis, etc., to distinguish it from suppurative arthritis, a much graver affection.[1]

The next patient, a woman in her forty-third year, presented a very large tumor, which fluctuated distinctly, and was believed by her attendant to be free from adhesions. The lecturer was also inclined to that opinion, but emphasized the impossibility of determining the fact beforehand, and that a good deal of pain had been complained of at times, which might mean a chronic peritonitis with firm adhesions.

Upon incision the whole anterior and lateral aspects of the tumor proved to be adherent, and required a tedious dissection with the fingers, knife, and scissors, and numerous ligatures before the tumor could be delivered. The whole anterior abdominal wall was adherent, as were the stomach and part of the small intestine, requiring ligation, and leaving behind some small portions of the outer part of the cyst-wall, many of the adhesions being so strong and intimate as to demand the utmost care in their treatment. The operation lasted one hour and forty minutes. Drainage was here clearly demanded, as there were probably eighteen square inches of raw, oozing peritoneal surface. The remaining ovary being slightly diseased, was also removed. [The case pursued an uneventful course, the tube being removed on the sixth day.]

Dr. Nancrede took occasion to explain the after-treatment he pursued in such cases. For the first twenty-four hours a little hot water to drink at intervals, a thirst was complained of, after this, arrowroot water, beef-tea, broths in small quantities frequently repeated; pint of tepid water injected into the rectum if much next toast and tea; finally, at the end of a week, such solid food as the patient desires. Opium is used only rarely, and then not for *pain*, but restlessness and nervous excitement, interfering with sleep; of the two evils opium is, then, the lesser. On the third or fourth day a saline laxative is administered—he preferred Seidlitz powders, one-fourth, one-half, or a whole one, as the stomach would bear it—repeated every hour or so until free purgation is induced. Should much pain with distention appear, which did not yield to turpentine enemata, purgation was instituted earlier. Quinine, digitalis, and strychnine, with stimulants, especially champagne, had kept up the heart's action in a previous case; the strychnine, given hypodermically, aiding in the expulsion of flatus. The case was unquestionably saved by the judicious use of these remedies with peptonized food, both by the mouth and rectum. Even with the vomiting of marked peritonitis, purgatives will do good if they can be retained; if not, give Epsom salts by enemata, as the lecturer had done in another case, and fed almost entirely by the rectum. Large accumulations of flatus with much liquid fæces can often be removed by the rectal tube, which had best be worn for a short time rather than frequently introduced.[1]

The lecturer, referring to operations for the radical cure of hernia, stated his belief that many of the statistics of the results of this operation were worthless, insufficient time having elapsed to demonstrate whether a cure had really been effected. Where a hernia could not be re-

[1] From the moment of aspiration all pain and inflammation ceased, sleep was normal, and prompt recovery with a good joint ensued within three weeks' time.

[1] Microscopic examination of the tumors removed from a case at a previous clinic, where secondary hæmorrhage occurred necessitating reopening of the wound, proved that they were carcinomata and undergoing mucoid softening. There was a firm fibrous envelope enabling the ligatures to hold firmly, but the soft interior portion of the pedicle was gradually forced out, thus lessening the pressure of the ligature so as to allow some vessels to ooze.

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tained by a truss, the operation was always both justified and indicated, because even if the protrusion was not permanently restrained, a truss could be worn, rendering the patient a useful member of society, and no longer exposed to the risks of strangulation. When operating for this latter condition the surgeon should always aim at a radical cure, if the condition of the parts and the patient permitted.

So much diversity of opinion exists among different operators that but few universally applicable principles have been established, but to Dr. Nancrede's mind two or three facts seem to be well established, at least for inguinal hernias, viz., that the sac should be removed high up; if possible the valve-action—alleged to be normal—of the inguinal canal should be restored by drawing the postero-internal boundaries of the canal behind the antero-external and keeping them there until sufficient plastic material should be formed to hold them in contact, rather than any attempt to approximate the margins of the ring which will not adhere firmly and soon yield.

The case before the class had been operated upon by Professor Maclean, two years ago, for a very large hernia on the right side, which had remained reduced for a long period, but, as was very common, had gradually returned, though, compared to its former size, it was now a most trivial affair. On the left side was a large hernia which the lecturer operated on in the following manner:

The sac was exposed, under strict antiseptic precautions, dissected loose well up beyond the internal ring, divided, sewed up with a purse-string of stout catgut and the stump pushed above the ring. The remaining portion of the sac, except enough to form a tunica vaginalis for the testicle, was excised, and the walls of the canal approximated by a stout silver wire, after the method of Mr. John Wood, this wire being removable in two straight pieces by reversing the twists and cutting the loop on or about the tenth day. To secure most effectually a large mass of plastic material, sutures were passed through the wound-lips, but *not tied*, a drainage-tube placed *in situ*, secured by a stitch, and the wound packed with iodoform gauze. When granulation tissue had been formed in large amount the packing would be withdrawn and the wound coaptated by tightening the sutures.

The next case presented was Mrs. H., aged forty-two years, colored, the mother of one child seventeen years old, never having conceived since, and with perfectly regular menstrual periods. She had noticed seven years previously a tumor, which has now grown so as to fill completely the true pelvis and a large portion of the abdomen. For one year past it had produced steadily increasing pressure-symptoms which now bring her to Ann Arbor for operation. There was some doubt whether these hard, partly movable abdominal and apparently fixed pelvic growths were not two solid ovarian tumors, since absolutely no information could be obtained by examining the uterine cavity, the os being bound above and to the right of the symphysis pubis. The absence of uterine hæmorrhage was in favor of this view; still, the diagnosis of fibroids had been made and Professor Nancrede had come prepared to extirpate the uterus, if an exploratory incision warranted this procedure.

An incision extending nearly from the ensiform cartilage to within two inches of the pubes enabled the operator, aided by an assistant forcing up the pelvic mass through the vagina, to deliver with the utmost difficulty a large, nodulated, irregular mass of fibroids between four and five pounds in weight. The left broad ligament, including the tube, was clamped, ligated, and cut, the bladder isolated and a temporary elastic ligature applied to arrest the hæmorrhage from several large veins in the growth, lacerated in the efforts to deliver the tumors. The right ovary and tube were now removed and the wire of a Kœberle *serre-nœud* applied, the skewers passed, and the tumor and elastic ligature cut away. The operation was completed by sewing the peritoneum carefully around and to the stump, searing this with the thermo-cautery, the introduction of a drainage-tube just above the pedicle and the closure of the wound. Little if any shock was noted. The usual methods to insure cleanliness were instituted, the stump being occasionally also mopped with tincture of iodine. [From time to time the wire was tightened, the softening stump trimmed away with scissors, and the constrictor was carefully removed on the twenty-fourth day because it could no longer be tightened, had ceased to constrict, and was a constant source of annoyance to the patient. The small remains of the stump were removed piecemeal, and although the patient had at the outset a sharp attack of peritonitis, a satisfactory recovery ensued; at the end of seven weeks, only a small granulating patch being left at the point of emergence of the pedicle.]

Dr. Nancrede then presented a case of nasal deformity. He had been unable to find any record of a similar case in a hurried review of the literature of the subject, but, of course, such may exist. In reality, the condition is one where the two imperfect rings formed by the alar cartilages on either side, instead of being in contact in the median line for a considerable distance, by flattening of their opposed surfaces, have remained circular, and touch only at one spot—viz., at the anterior nasal spine, producing the effect of the so-called double-nosed pointer dog. When an infant, an attempt at cure was made by excising a wedge of tissue from the nasal tip and suturing; this has made the deformity more apparent, the elastic force of the cartilages acting like two springs to pull the tissues away from the median line.

The indications were clear enough; whether they could be effectually carried out, remained to be seen.

A tenotome was introduced along each side of the septum, and two parallel submucous divisions of the median aspect of each cartilaginous ring were made, when a suture of silkworm-gut was passed within the nostrils so as to include the partially divided cartilages and draw them together medianly: an extemporized septum compressor was then introduced with a blade in either nostril, gently held together by an elastic rubber band.

The lecturer explained that success would result slowly, if at all, and in the following manner: His submucous division of the cartilages would, to a certain extent, overcome their elastic recoil from the median line. The traumatism of the knife-cuts and the suture would result in the effusion of a considerable amount of plastic matter between the cartilages, which, after the manner of all such new tissue, would contract, tending to hold and draw more and more together the widely separated cartilages. When all that could be thus effected was secured, another operation might be attempted to raise

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the depressed median cicatrix left by the former operation. A tenotome could be introduced, the scar dissected loose subcutaneously, elevated into an actual projecting ridge, and held there by harelip pins or sutures; in time the ridge would be levelled down, leaving a comparatively normal tip to the nose.

The next patient, a weaver, about thirty years of age, some two weeks ago noticed pain and swelling in the groin, which led him some days later to his physician, who said that on taxis one of two inguinal tumors apparently disappeared. The patient then had a distended abdomen, with constipation, but no vomiting; moreover, his doctor thought he recognized the characteristic gurgle of a reducing intestine. There has been slight elevation of body-heat, persistence of the bulk of the swelling, and now, within the past few days, vomiting has set in, with an increase in size of the tumor, which lies chiefly over the site of the internal abdominal ring. The inguinal canal is free from anything like a terminal protrusion, yet there is a history of an apparent partial reduction of a hernia, distended abdomen, and vomiting. The swelling is found to be both below and above Poupart's ligament, and seems to contain pus; in other words, we have a suppurating bubo.

How are the symptoms to be explained? It has been shown that every symptom of strangulation, even to apparent fæcal vomiting, can be induced by irritation of the peripheral sensory nerves of the abdominal wall and adnexa, which will arrest peristalsis. Thus, an inflamed testicle, especially when retained in the inguinal canal, an inflamed hydrocele, and more than once just such cases as this have simulated a strangulated hernia so closely that experienced surgeons have been compelled to make an exploratory incision. Opening of the abscess put a prompt end to all the peculiar symptoms.

CLINICAL CASES.

Selected from the Service of

CHARLES T. PARKES, A.M., M.D.,
PROFESSOR OF SURGERY IN THE RUSH MEDICAL COLLEGE, CHICAGO, ILL.

[Reported by A. J. OCHSNER, M D., B.S., F.R.M.S., Chief of Surgical Clinic.]

CASE I.—Sylvia M., aged sixteen years, American school-girl. At the time of birth a small nævus was noticed opposite the infra-orbital foramen; this constantly increased in size until, at the time of the operation, she had a venous angioma covering the entire cheek, and including one-third of the upper lip, producing an extreme degree of deformity. The tumor had a thickness of one and one-half inches, and appeared through the skin covering the cheek and the mucous membrane of the lip and mouth as a somewhat irregular, purplish mass.

Operation November 22, 1889. A curved incision was carried from a point one inch below the external angle of the eye to the angle of the mouth, through the skin and fascia. Care being taken to remain outside the substance of the tumor, a thick silk suture was carried around the facial artery at a point where it crosses the lower jaw, and was tied temporarily. The upper lip was resected to the extent involved, the incision was then carried along the border of the nose to a point three-quarters of an inch below the inner angle of the eye. As much as was possible of the mucous membrane lining the mouth was saved by carefully dissecting it from the mass. All the soft tissues of the cheek had been destroyed by absorption from pressure, so that the tumor had to be dissected up from the bone. The entire flap being loosened, those portions receiving their blood-supply from the transverse facial and the infra-orbital vessels were separated and these vessels caught in hæmostatic forceps; then those portions of the skin directly involved in the angioma were cut away, and the remaining very irregular flaps dissected from the underlying angioma, and twisted about and sewed together in a manner calculated to prevent the occurrence of ectropion from cicatricial contraction, and to cover the entire surface. The remnants of the mucous membrane lining the mouth had previously been united by a continuous catgut suture. A small iodoform-gauze drain was introduced under the flap. Very little blood was lost during the operation. The wounds healed kindly, and the patient was discharged on the twentieth day after the operation. The deformity was much less marked than before the operation, and has continued to decrease. The irregularities caused by twisting the skin flaps have already disappeared to a marked extent.

CASE II.—A woman nineteen years old. Congenital angioma, as large as a pin-head when first noticed, near the centre of the upper lip. When presented for operation it was as large as a hen's egg, of a purplish color, disappeared upon pressure, but returned immediately after pressure was removed. It almost entirely covered the mouth, the tissues of the upper lip being displaced to either side and partly absorbed from pressure.

Operation December 4, 1889. Compressing the upper lip moderately on either side, by means of large forceps, an incision was made through the skin, and the tumor dissected out. The remnants of the lip were now united by sewing together the mucous membrane, the muscular layer, and the skin by means of separate rows of sutures. Perfect union took place, and the lip has already stretched to a fair length. The deformity is very slight, compared with the original one, and is constantly decreasing.

CASE III.—The patient, a woman of twenty-six years, had a small nævus on the upper lip, a little to the left of the centre, which constantly enlarged, notwithstanding treatment with electrolysis, until it became a purplish mass as large as a hen's egg, causing the upper lip to extend far below the under and up on the left cheek.

Operation January 15, 1890. The tumor was carefully dissected out; the hæmorrhage was very slight, being controlled mainly by pressure; the remnants of the lip were united by three rows of sutures, as in the previous case. The wound united kindly, and the lip is assuming a very natural appearance; the scars are slight, and the deformity is decreasing.

In these cases the hæmorrhage was slight, because the dissection was made outside of the tumor, for it is only when the tumor is cut into that there is any considerable loss of blood. In case of bleeding from the tumor, it is most easily controlled by lifting the mass from its base, and grasping it between the finger and thumb. After such operations the deformity is usually much less than anticipated, because the tumor displaces rather than destroys the surrounding tissues.

In all these cases the dressings consisted of iodoform gauze and borated cotton.

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CASE IV.—The patient was a Scandinavian woman, forty-eight years old, of good habits. For twenty years she has had a right inguinal hernia, usually retainable by means of a truss; seventy-two hours previous to her admission it had become incarcerated, and all attempts at reduction, made by the patient, were in vain.

Operation November 17, 1889. Upon opening the sac the intestines were found to be black with small whitish spots of lymph here and there. The peritoneal covering of the intestine, however, still had its shining appearance, and the intestines were returned into the peritoneal cavity after enlarging the ring by means of a probe-pointed knife, guided by the finger. The sac was so nearly necrotic that it was peeled out without effort or bleeding. It was cut off a little outside of the ring, and the ring and canal were packed with iodoform gauze, and iodoform gauze and borated cotton dressing were applied. The patient's temperature fell from 103° to 99.5° during the next twenty-four hours, and much flatus was passed. On the second day there were three free evacuations of the bowels. The patient continued to progress, and the wound remained aseptic, although there was some serous discharge from the necrotic surfaces. On the tenth day the patient had some pain, which subsided after taking some hot brandy. On the twelfth day the discharge from the wound, which had been kept open by the iodoform gauze, had a slightly fæcal odor. For one week there was some fæcal discharge, but the wound again became clean, the amount of packing was decreased, and nine weeks after the operation the wound was entirely healed. The canal is now filled with a solid mass of connective tissue, and the patient's bowels act normally. The patient's life was undoubtedly saved by the use of iodoform packing, which permitted the discharge from the break in the intestine to come out, and so preventing the occurrence of perforation peritonitis by keeping the external wound wide open. The wound in the intestine healed rapidly, preventing the annoyance of a fæcal fistula.

CASE V.—The patient, a woman, twenty-nine years old, had suffered for two years from left inguinal hernia; the pain was very severe, and excited nausea when the hernia was down. It was never very difficult to reduce the hernia, but always quite painful.

Operation January 21, 1890. The sac contained the ovary and a portion of the Fallopian, distended to three-fourths of an inch in diameter and adherent to the inner margin of the ring. The tube and ovarian artery were ligated by transfixion with a double ligature, and the ovary and enlarged portion of the tube were removed; the stump was returned into the abdominal cavity; the sac dissected out, ligated, and cut away, and the ring and canal closed by continuous catgut sutures. The wound healed primarily, there being nothing abnormal in the recovery, excepting a slight abscess in one of the stitches through the skin. There is a firm mass in the canal, and no protrusion upon coughing or straining.

CASE VI.—Patient was a married woman, twenty-eight years old. An irreducible femoral hernia was induced by patient making a misstep. During the first twenty-four hours several fruitless attempts at reduction by taxis were made by the attending physician. On January 23d, twenty-four hours after the occurrence of the accident, herniotomy was performed. The sac was black, and the hernial fluid dark-colored and of extremely bad odor. The hernia was found to consist of the elongated and perforated vermiform appendix, which had become necrotic except at its base. An enterolith was found free in the cavity of the sac, having escaped through the opening in the appendix. The appendix was tied at its base with silk, and cut off, and its cavity thoroughly cauterized with strong carbolic acid; the sac was dissected out, and cut off without tying, and the wound was packed with iodoform gauze. On the fifth day there was a distinct fæcal odor in the packing; this odor lasted four days. The wound healed by granulation from the bottom, being entirely closed on February 23d. There was, at no time after the operation, any rise in temperature, or any other symptom indicating the gravity of the conditions present at the time of the operation. Here, again, the free packing of the wound with iodoform gauze was a source of safety to the patient.

CASE VII.—The patient is a man, twenty-five years old, carpenter by trade. Four months ago, while lifting a heavy weight, he felt a severe pain in the left inguinal region, and directly after noticed a tumor in this region, which gave rise to much pain and some nausea. The attending physician diagnosed an omental hernia, which he reduced in part by taxis, getting the characteristic gurgling sound, which was also heard by the patient. Physician and patient state that the tumor was twice its present size before the use of taxis. The remaining portion of the tumor continued to be painful, became slightly larger, and somewhat inflamed, the skin being red over it. At the time of the operation, January 20, 1890, the tumor had the appearance of a bubo. The incision over the inguinal canal exposed an infected lymphatic gland as large as a walnut.

The abdominal ring was large, but no hernial sac could be found. The wound was packed with iodoform gauze, and healed rapidly by granulation.

The patient denies the possibility of specific infection.

CASE VIII.—The patient, a man, twenty-four years old, whose right testicle has never descended into the scrotum, has experienced much difficulty in retaining a congenital hernia of the right side. When it is down there is severe sickening pain, which is readily relieved by reducing the hernia.

Herniotomy February 18, 1890. The sac was found empty at first, but, upon straining, the testicle, about half the normal size, came through the ring. It was impossible to bring it down into the scrotum. Ligation by transfixion with double silk ligature, removal of testicle, and returning the stump into the ring were practised. The canal was closed by three rows of continuous catgut sutures. By February 24th the wound had united throughout.

CASE IX.—Mrs. C., housewife, forty-six years old. For eleven years this patient has been treated in vain for lupus of the face. As a result of the irritation, there is now a distinctly marked epithelioma implicating an oval surface four by six inches, including one-fifth of the ear and extending in front above the ear over the side of the face and scalp.

Operation November 4, 1889. Removal of skin and fascia one-third of an inch beyond all parts of the disease, including the diseased parts of the ear. After ligating the large vessels, the entire surface and the margins

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were thoroughly cauterized with the Paquelin cautery. An iodoform gauze and borated cotton dressing was applied and allowed to remain for a week, then a wet two per cent. carbolic acid dressing was applied and renewed every third day to stimulate the exfoliation of the eschar. After three weeks the entire surface was covered with fine healthy granulations. These were curetted away and the surface covered with long shavings of skin, after Thiersch's method; these were covered with strips of Lister protective silk, borated cotton, wet with 6 to 1000 solution of table salt, over this a piece of gutta-percha tissue was placed, and over all a large piece of cotton and a roller bandage. This dressing was changed every second day for ten days.

The wound on the ear was freshened and united with the part attached to the side of the head, causing it to look quite natural and only a little smaller than the one on the other side.

After two weeks the entire surface was smoothly healed, and by wearing a wig, the apparent deformity was very slight. In quite a number of cases where we have grafted skin, after Thiersch's method, on defects caused by the removal of tumors the results have been very satisfactory. These cases will be published in full at a later date.

CASE X.—Six months ago the patient, a man, forty years old, had his face severely burned by the explosion of natural gas in a shaft. When healing was completed there was ectropion of both lids of each eye, so that what was left of the eyebrows and eyelashes was almost completely united.

Operation November 30, 1889. An incision was made parallel to the margin of the lids and one-eighth of an inch away from them, extending quite through all of the cicatricial tissues and into the subcutaneous connective tissue. The margins of the upper and lower lids were now united by rows of continuous sutures of fine silk. The bleeding was controlled by pressure. The entire surface equal to the area of the skin covering normal eyelids was covered with grafts, according to Thiersch's method, care being taken to press the skin into the depressions caused by the incisions. Salt water compress was applied and changed every other day for ten days; at the end of two weeks the lids were liberated and the patient advised to use his eyes carefully. The lids were well covered and the eyes well protected, which condition has continued to improve since the operation.

CASE XI.—Mr. D., sixty-five years old. Patient had suffered for several years from increasing ectropion of lower lids. Conjunctivæ highly inflamed, tears constantly flowing down over the cheek.

Operation December 8, 1889. An incision was made parallel to the margin of the lower lid and one-fifth of an inch from it, extending through the skin and into the subcutaneous connective tissue. The lower lids were then fastened over the upper lids by means of six stitches held on the forehead by rubber adhesive straps for the purpose of immobilization. The raw surface thus formed was covered with skin grafted after Thiersch's method. After ten days the lids were released, the grafts had "taken" throughout and the irritation on the conjunctiva had begun to subside. Six weeks later the lids were quite normal, and they have continued so to the present date, ten weeks after the operation.

MEDICAL PROGRESS.

Parasiticide Ointment.—According to the *Journal of Cutaneous and Genito-Urinary Diseases*, the following is useful, both in skin affections depending upon pediculi as well as in those due to the vegetable parasites:

℞.—Salicylic acid	. . .	45 grains.
Borax	. . .	15 "
Balsam of Peru	. . .	30 "
Vaseline	. . .	5 drachms
Ethereal essence of anise	.	5 drops
Essence of bergamot	.	20 " —M.

Prescription for Pruritus.—The following prescription for pruritus of the anus or vulva is quoted in the *Buffalo Medical and Surgical Journal:*

℞.—Sodium hyposulphite	. .	3½ drachms
Carbolic acid	. . .	30 grains.
Glycerin	. . .	2 drachms.
Water	. . .	3½ ounces.—M.

Nutritive Enema.—According to the *Satellite*, JACCOUD recommends a nutritive enema composed as follows:

℞.—Beef tea	. . .	8 ounces.
Wine	. . .	4 "
Yolks of two eggs.		
Dry pepsin	. . .	1 to 5 drachms.

Tincture of Capsicum in the Pneumonia of Drunkards.—DR. NETSCHAEFF, in the *Vratch*, highly recommends the tincture of capsicum in the treatment of pneumonia occurring in alcoholics. He uses the tincture of capsicum annuum according to the following formula:

℞.—Tincture of capsicum	.	1 drachm
Water	. . .	5½ ounces.
Syrup	. . .	5 drachms.—M.

One teaspoonful every two or three hours.

The pure tincture in doses of 20 drops, well diluted, may also be employed. If in spite of these doses the heart becomes weaker and the nervous symptoms more pronounced, the dose should be increased, as no harm will follow the administration of very large amounts.

The author thinks that the remedy causes the disappearance of delirium, modifies the character of the pneumonia, increases the appetite and promotes sleep. —*Wiener medizinische Presse*, February 23, 1890.

The Treatment of Scabies with Petroleum.—DR. BOURGEOIS, in the *Revue Générale de Clinique et de Thérapeutique*, gives the following details of the treatment of scabies with petroleum, which he believes is one of the most efficient parasiticides: The first day he orders, just before the patient retires, inunctions of petroleum over the whole surface of the body, except the head, rubbing more particularly the affected surfaces. The shirt is then resumed and the patient put to bed. The next morning the greasy substance is washed off with warm water and white soap. The linen is changed, and the patient goes about his usual occupation. At night, before retiring, a new application of petroleum is made, as before, and the following morning the same procedure to remove

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the oil. Ordinarily, after the second day the itching is completely relieved; but, as a measure of security, it is well to make a third application, after which the patient may be considered completely cured.

The author claims that this treatment is entirely innocuous and free from pain. It would seem to be quite efficacious, since in fourteen cases there were fourteen complete cures, without the necessity of disinfecting the garments.—*Journal of Cutaneous and Genito-Urinary Diseases*, March, 1890.

The Cause and Treatment of Chlorosis.—According to the Paris correspondent of the *British Medical Journal*, M. DUCLOS believes with Sir Andrew Clark, that chlorosis is a fæcal auto-intoxication, which should be treated by purging, prolonged until the intestine is completely freed from all the hardened and decomposed fæcal matters. He recommends a vegetable rather than meat diet. When constipation is not very marked the affection results from the great activity of putrid decomposition, and should be treated with carbonate of soda combined with carbonate of lime, magnesia, and charcoal. Iron is beneficial because it forms an iron sulphide with the hydrosulphuric acid in the intestine. Hyposulphite of sodium has been of use in checking fæcal fermentation; naphthol might serve the same purpose.

The Analgesic Properties of Exalgine.—DR. THOMAS R. FRASER has been conducting a series of observations upon the analgesic effects of exalgine (*methylacetanilide*) in the Edinburgh Royal Infirmary. The studies were with sixteen diseases in twenty-one patients, and, among other affections, included facial neuralgia, sciatica, locomotor ataxia, rheumatic synovitis, abdominal cancer, and aortic aneurism. The doses prescribed were small, one, two, or four grains, and the largest amount given in twenty-four hours was fourteen grains. No disagreeable symptoms were produced in any of the patients. An analysis of his lecture (*British Medical Journal*, February 15, 1890) shows that eighty-eight separate administrations of the drug were made and that in sixty-seven pain was relieved. The condition of some of the patients, however, was such that relief could not be expected without general narcotism. The best results were obtained in the various forms of neuralgia where fifty-two administrations gave relief forty-eight times. Dr. Fraser concludes his lecture by stating that the analgesic effect of exalgine is not a very powerful one, but that it has the enormous advantage of being free from the inconveniences of other pain-subduing agents and from the dangers of the more powerful of such agents.

GAUDINAU (*Therapeutische Monatshefte*, February, 1890) also writes in praise of the analgesic properties of exalgine, and states that a single dose of from four to eight grains causes the pain of neuralgia and of rheumatic synovitis to disappear within an hour. The only unfavorable effects observed are occasionally tinnitus aurium and a feeling of intoxication. The author prescribes the drug as follows:

℞.—Exalgine	37 grains.
Alcohol	3½ drachms.
Syrup	1 ounce.
Water	6 ounces.—Mix.

One tablespoonful as required.

At the recent International Congress of Therapeutics held in Paris there were a few dissenting voices, but the majority of speakers upon exalgine considered it a valuable analgesic. Mr. Bardet stated that much of the so-called exalgine is in reality a different and inert substance. M. Dujardin-Beaumetz believed that it had undoubted analgesic properties, but that on the whole it was inferior to antipyrine. He had also found that if continued long or given in large doses disagreeable though harmless giddiness was often produced.

Collodion in Atony of the Tympanic Membrane.—DR. KELLAR, of Cologne, uses collodion in the treatment of deafness due to relaxation of the tympanic membrane. After the middle ear is inflated the patient's head is strongly inclined toward the healthy side, an aural speculum is introduced, and the collodion dropped into the auditory canal. The excess of collodion is immediately absorbed with cotton. An examination is then made, and if the membrane is not completely covered the procedure is repeated. The author claims that the effects are excellent.—*Wiener medizinische Presse*, February 23, 1890.

Mussanin; a New Anthelmintic.—In the bark of an Abyssinian tree, the Acacia Anthelmintica, THIEL has discovered a new anthelmintic which he terms *mussanin*. The anthelmintic properties of the drug are said to be more powerful than those of koussu and the taste is much more agreeable. The powdered bark may be given in doses of from one to two ounces, or it may be administered in the form of an infusion. The author considers that the drug is destined to assume an important position in therapeutics.—*Wiener medizinische Presse*, February 23, 1890.

Prescription for Pityriasis Capitis.—DR. M. D. STERN recommends the following ointment for pityriasis capitis:

℞.—Ammoniated mercury .	2½ drachms.
Green soap . . .	10 "
Lanolin	1½ ounces.—M.

—*Journal de Médecine de Paris*, February 23, 1890.

Orexin.—The Berlin correspondent of the *Provincial Medical Journal* writes as follows on the use of orexin, a remedy recently introduced, which is said to increase the appetite and aid digestion. Clinically the drug has been tried in cases of loss of appetite following operations and accompanying phthisis, affections of the stomach, and various other diseases, such as albuminuria, anæmia, and dyspepsia. The results of the use of orexin hydrochlorate in thirty six cases were in accord with the observations on normal individuals; the appetite was stimulated and the digestive powers increased. The amount administered never exceeded eight grains at a dose nor twenty-four grains daily, though these doses produced no unpleasant symptoms. It was found that one, or at most two doses daily were sufficient to cause the desired effects. It was at first prescribed in wafers, but owing to its bitter taste and the production of a burning sensation in the mouth and throat, gelatin-coated pills were found to be preferable. On account of the irritating properties of the drug large quantities of fluid should be swallowed after each dose.

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SATURDAY, MARCH 22, 1890.

THE RELATIONS BETWEEN THE BACILLUS COLI COMMUNIS AND THE BACILLUS OF EBERTH.

PROBABLY the bacteriological question of greatest practical interest is whether an organism may be benign in one locality and malignant in another; or, to state it differently, whether the property of infection is an adventitious one depending upon the soil in which the organism grows, or inherent in its substance. An attempt to solve this problem, in so far as it relates to the typhoid bacillus, has just been made by RODET and ROUX (*Comptes Rendus Hebdomadaires des Séances de la Société de Biologie*, February 21, 1890), whose researches have led them to conclude that the bacillus of Eberth is nothing more than a modification of the bacillus coli communis.

The facts upon which they base this opinion are of two kinds. In the first place, they made cultures of the blood of the spleen and of the fæcal matters of two typhoid patients, and found that the former produced nothing but the bacillus of Eberth, and the latter little else than the bacillus coli communis —the bacillus of Esherich.

In the second place, according to Rodet and Roux, the optical points of resemblance between the two bacilli are greater than those of difference, and are such as to warrant the belief that the one is a modification of the other. Carefully conducted cultures in gelatin, potato, and bouillon, exhibit similar macroscopic appearances, while the limits of temperature within which the two organisms can be cultivated are almost identical, being somewhat higher (46.5° C.) in the case of the bacillus coli than in that of Eberth's bacillus (45°).

Under the microscope the differences are more marked, the bacilli coli being of almost uniform length, homogeneous in structure, slightly mobile, and staining readily, while the bacilli of Eberth are of unequal length and thickness, are more mobile and stain less readily than the bacilli coli. The structure of their protoplasm also is evidently not homogeneous.

If, however, the bacillus coli be cultivated at a temperature of 44° to 46° C. it undergoes such changes as to cause it to bear a remarkable resemblance to the typhoid bacillus. The rods become of unequal length; their protoplasm ceases to be homogeneous, and presents a series of readily staining condensations, separated by clear intervals; in a word, the result of numerous observations of the sort is to show that while the type of Eberth's bacillus is relatively fixed, that of the bacillus coli is remarkably unstable, and, by a series of transitions, approaches and even becomes identical with the former.

The typhoid bacillus of Eberth is, according to the authors quoted, the bacillus coli in a state of degeneration. This is shown by the fact that the former is less able to resist heat than the latter, Eberth's bacillus being destroyed by a temperature (80° C.) which is supported by the bacilli coli. This is far from saying that the bacillus which causes enteric fever is in a state of degeneration at the time of infection. The bacillus coli becomes virulent without any notable change in its appearances and other characters, and it is in the interior of the organism, especially in the spleen, that it assumes the features of Eberth's bacillus. The latter are the result of the destructive forces of the body. The practical conclusions from these researches are twofold:

1. Water contaminated with fæcal matter, not necessarily typhoidal, may give rise to enteric fever.

2. The tolerance of the organism for the bacillus coli shows that the latter acquires its virulent features outside of the body.

It is to be hoped that the experiments of Rodet and Roux will be thoroughly investigated. Certainly, none more practical could engage the atten-

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tion of bacteriologists. If confirmed, the term pythogenic fever, introduced many years ago by Murchison, may yet be generally accepted as the proper one for the disease which is now somewhat vaguely styled typhoid or enteric fever.

REVIEWS.

MONTHLY NURSING. By A. WORCESTER, A.M., M.D. Second edition. 12mo., pp. 250. New York: D. Appleton & Co., 1890.

THE important position assumed by skilled nursing during the past few years is well shown by the number of text-books on the subject which have appeared. Unfortunately, many of these books are more fitted for the medical student than the student nurse, containing much that the latter neither can nor need understand. Such cannot be said of the volume before us. Written in the attractive style of an easy conversational lecture, it makes no attempt to teach more obstetrics than is absolutely required by a competent nurse in dealing with the emergencies and trying circumstances with which she is sure to meet. The author has also "tried to tell what kind of service the physician and the patient have the right to expect from the monthly nurse," and, we may add, tried with entire success. For these reasons the book is of more value to the nurse, and less to the physician, than any with which we are familiar, though its usefulness could have been still more increased by the addition of a few wood-cuts, a more copious index, and some system of convenient reference.

HAND-BOOK OF MATERIA MEDICA AND THERAPEUTICS. By SAMUEL O. L. POTTER, M.A., M.D. Second edition. Revised and enlarged. Philadelphia: P. Blakiston, Son & Co., 1890.

ALTHOUGH Potter's *Therapeutics* has been but a short time before the medical profession, there can be little doubt that it has come to be regarded as one of the works to which American medicine can point with pride. Its chief fault seems to us to lie in the endeavor of its author to place too much minute information on a comparatively small number of pages; that is to say, the portion of the book which is devoted to materia medica and therapeutics might, without disadvantage, fill the entire volume. The discussion of part third, known as Special Therapeutics, is certainly of sufficient importance, if mentioned at all, to deserve more pages than it now covers. Notwithstanding the defects, which are chiefly those of omission, we think the book is one which may be recommended both to students and practitioners when in search of therapeutical knowledge. At the same time we believe that the arrangement of differential diagnosis is one which of necessity has to be so superficial as to permit of error in the hands of one whose information depended almost entirely upon this source. As one turns the pages he is struck by the great number of subjects which are noticed. Patent medicines find space for analyses of their contents, and very properly precede the portion of the work which discusses the treatment of poisoning. One advantage of the book is that it mentions drugs which are not officinal, but which are frequently used in medicine, at least in certain parts of the United States. In the appendix, a list of Latin words and phrases used in writing prescriptions is given, and a very good general index, not divided into the consideration of drugs and diseases, ends the volume.

The publishers have, however, increased the diameter of the work to a considerable extent by the addition of a goodly number of advertising pages, which to the book purchaser may be considered as an advantage or a disadvantage directly measurable by the capacity of his pocketbook.

A HANDBOOK OF OBSTETRICAL NURSING. By ANNA M. FULLERTON, M.D. 12mo., pp. 214. Philadelphia: P. Blakiston, Son & Co., 1890.

THIS little book is one of the best which has so far appeared upon the subject of obstetric nursing. Though not claiming originality, it shows an intimate acquaintance with the requirements of a nurse, and leaves no doubt in the mind of the reader that the author is experienced in the management of labor and the puerperal state. Careful and minute instructions are given for the preparation of the patient and her surroundings. The accidents which may happen in the absence of the physician are described, and the duties of the nurse in such emergencies are clearly explained.

Particularly detailed are the instructions upon the use and preparation of the various antiseptics used in obstetric practice, creolin apparently being the antiseptic preferred by the author. The various devices for the sterilization of milk, most of which are unnecessarily complicated, are also described at length. Altogether, the book is very satisfactory, and one that we can recommend both to the student of nursing and of obstetrics.

ELECTRICITY IN THE DISEASES OF WOMEN, WITH SPECIAL REFERENCE TO THE APPLICATION OF STRONG CURRENTS. By G. BETTON MASSEY, M.D. 12mo., pp. 210. Philadelphia and London: F. A. Davis, 1889.

AN inspection of this book will show that it is a notable production, not only as the first systematic exposition of a new and conservative method of treating many of the diseases of women, but also as the first book on medical electricity based on modern ideas of currents and employing the terms that belong essentially to the era of the dynamo and the electric light. This is shown by the absence of the obsolete theories and wearisome explanations that are usually found in electro-therapeutic works, the reader's attention being immediately directed to a consideration of the currents themselves as therapeutic entities rather than to the batteries that produce them, although enough space is given to apparatus and similar details to indicate the author's choice, and the proper method of handling them.

A special chapter is given to the physical characteristics of each current, illustrated by detailed experiments.

There certainly can be no better way of mastering the intricacies of volts, ohms, milliampères, than an actual performance of these experiments, preferably upon one's self, if possible, or even upon a subject.

Following this practical consideration of currents, and their management, which, indeed, is the most valuable

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part of the book to the beginner, a chapter each is given to intra-uterine, galvano-chemical cauterization; electro-puncture; vaginal applications; and general percutaneous application. In each of these, explicit and exact directions are given.

The therapeutical portion is ushered in by Chapter XI., devoted to the electrical treatment of fibroid tumors of the uterus. This is, of course, an important feature of the work, and much space is given to detailed notes of cases rather than to the glittering generalities that some writers think sufficient to carry conviction. Here, as elsewhere, the author confines himself to his personal experience. The intra-uterine method is mainly relied upon, puncture being but seldom advised. An aseptic, pliant electrode capable of being insulated beyond the os, and the use of soaped absorbent cotton pads, instead of clay, for currents under 100 milliampères, are the main departures recommended from the oft-described method of Apostoli.

Chapter XVII. is a concise statement of the claims of electricity in the treatment of extra-uterine pregnancy. Fœticide by the faradic current is recommended in cases diagnosed before rupture, followed by the galvanic current for the promotion of absorption. Both currents are to be applied without puncture, the sac being merely included between an electrode in the vagina and one on the abdomen. Chapter XVIII. deals with the treatment of amenorrhœa and hydrosalpinx.

In the final chapters of the work devoted to the contra-indications and limitations to the use of strong currents, any attempts at electrical treatment are condemned in *cystic ovarian tumors* and in *papillomatous tumors* of the broad ligament, the author basing his opinion mainly both upon the history of published attempts and the want of a rational basis for such treatment. The opening paragraph of this chapter is worth quotation:

"The voice of authority cannot be too early raised against the indiscriminate and careless employment of the powerful agency treated of in these pages. It is in the nature of things that a power for good, when unharnessed, becomes an engine of evil in proportion to its potentiality; hence an operator who cannot bring a calm and unbiassed judgment as well as electrical knowledge and skill to this work had best leave it alone."

We have endeavored to present in condensed form Dr. Massey's views as expressed in his book. In our opinion electricity, in the treatment of certain diseases of women, has come to stay.

DU SANG ET DE SES ALTERATIONS ANATOMIQUES, PAR GEORGES HAYEM. 8vo., pp. 1023. Paris: G. Masson, 1889.

THIS book, written by one who has devoted a very large amount of time and study to the physiology and pathology of the blood, has been received, both in France and in this country, by those who are fortunate enough to read French, with a great deal of interest, and has already obtained for itself a large amount of praise from those who are best qualified to judge of its value. Dealing as it does in the most thorough manner with everything that can possibly appertain to the subject, and being illustrated by a very large number of colored drawings, it affords by far the best book of reference in the study of this, the most important tissue of our bodies.

During the past few years so much attention has been paid by clinicians and pathologists to the changes which take place in the blood of human beings suffering from various diseased conditions that Dr. Hayem has found, in addition to his own experience, a very large amount of interesting material which he has embodied in his book, leaving out, with unusually good foresight, all studies which have seemed in any way imperfect or unworthy of mention.

Unfortunately, books devoted to the study of comparatively limited portions of the body seldom possess a sufficient popularity to warrant their translation into the English language, but we think that in this instance the profession in America and England would find so much of practical utility in the book before us as to justify its translation. This is particularly the case owing to the fact that so great an amount of information is contained in its pages, the result being that physicians in all the branches of medicine would find matters of interest. The physiologist will find careful statements regarding the condition of the blood and the tests for the isolation of the various crystals and their bodies. The physician will find information as to the manner in which he is to seek for variations in the number of the various corpuscles and in the quantity of the hæmoglobin, while the pathologist will also obtain valuable additions to his knowledge in regard to the abnormal changes which may take place. Dr. Hayem's book is certainly the best one which has ever appeared upon this subject, and its reliability is attested by the well-known investigations and studies of its author heretofore given to the profession.

SAUNDERS'S QUESTION COMPENDS: ESSENTIALS OF OBSTETRICS ARRANGED IN THE FORM OF QUESTIONS AND ANSWERS. BY WILLIAM EASTERLY ASHTON, M.D. 12mo., pp. 220. Philadelphia: W. B. Saunders, 1890.

THIS book, which has already reached its fourth thousand, has been written by the Demonstrator of Clinical Obstetrics in Jefferson Medical College, and considering the fact that its size has, of necessity, to be a limited one, Dr. Ashton has certainly placed between its covers a large amount of information. While the use of questions and answers may not seem to the busy practitioner to be of any particular value, the experience of the medical student teaches him that this arrangement is one which is the most apt to impress upon his memory the important points for the examination room and for his early practice. Dr. Ashton's book certainly has proved of sufficient value to make for itself a large sale within a short time, and we think that those students who, by reason of the limited development of their cortex, are forced to buy this variety of literature will find the book one of the best that can be obtained.

PHYSICIANS' LEISURE LIBRARY: DIABETES. By A. H. SMITH, M.D. 12mo., pp. 74. Detroit: George S. Davis, 1889.

THIS little book contains within a short space a fairly good *résumé* of the important subject of which it treats, and a very large portion of it is very properly devoted to the prevention and treatment of this troublesome dis-

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ease. It is stated in the preface that a large amount of the information which it contains has been obtained from the articles of Dr. Tyson in Pepper's *System of Medicine*, and in the *Annual of the Universal Medical Sciences* for 1888 and 1889.

The advantage of combining a large amount of information in a small space has been recognized to such a degree that the physician in a comparatively short time may obtain a very good idea of the condition with which the book deals without an undue amount of mental effort.

THE CURE OF CROOKED AND OTHERWISE DEFORMED NOSES. By JOHN B. ROBERTS, A.M., M.D. 12mo., pp. 24. Philadelphia: P. Blakiston, Son & Co.

THE author of this little brochure of twenty-four pages frankly states, in his introductory remarks, that the performance of the operations described may be "a source of revenue to the operator." This being often a very important branch of medical science, the volume will, doubtless, have many readers. As the subject-matter compares very favorably with chapters on this topic in standard surgical text-books, it will probably be welcomed by the general surgeon. The teachings of rhinological specialists are, however, much more moderate: the extreme measures advocated by Dr. Roberts having been almost wholly abandoned by them some years ago.

TEXT-BOOK OF MEDICAL CHEMISTRY. By ELIAS H. BARTLEY, B.S., M.D. Second edition, revised and enlarged. 12mo., pp. 423. Philadelphia: P. Blakiston, Son & Co., 1890.

THIS book presents in a convenient and readily accessible form, much of the chemical knowledge required by physician and pharmacist. Part I. is devoted to elementary physics, and contains an excellent and instructive section upon the theory and nomenclature of electricity, concerning which, it is to be feared, most physicians have had but imperfect instruction. Theoretical chemistry, so appalling with its complex formulæ to the student at the beginning of his studies, is simply yet thoroughly explained in Part II. In Parts III. and IV., inorganic and organic chemistry are treated of in a somewhat conventional manner, with here and there detailed considerations of elements and compounds of direct interest to the physician. For example, under the head of hydrogen and oxygen, the methods of water analysis and various tests for impurities are described, as well as the composition of many of the mineral waters.

The section on poisons is the least satisfactory of any, as some of the antidotes mentioned are not antidotal to the poisons for which they are advised. Alkaline carbonates, baking soda, and soap, recommended here in cases of oxalic acid poisoning, should not be used, as the oxalates of sodium and of potassium are themselves toxic. In the treatment of carbolic acid poisoning, oil, emetics, and the stomach-pump are advised, no mention being made of the soluble sulphates, the true antidotes to this acid. Moreover, emetics will seldom, if ever, act, owing to the complete anæsthetization of the sensory nerves of the stomach. With these rather unfortunate exceptions, the volume is an excellent text-book, and one for which there is doubtless a place.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Section on Surgery.

ROBERT ABBE, M.D., IN THE CHAIR.

Stated Meeting, February 10, 1890.

The meeting was devoted to a discussion of the subject of the treatment of fracture of the patella, and interesting cases illustrating the good results obtained by the operative method were presented by Drs. Abbe, Fluhrer, and Willy Meyer.

DR. W. T. BULL read a paper on the

RESULTS OF THE TREATMENT OF FRACTURED PATELLA WITHOUT OPERATION,

and illustrated his paper by presenting a number of cases which had been treated in this manner. Many of them had received their fractures eight or ten years before, and although representing active occupations, such as firemen, policemen, and truck-drivers, they were able to attend to their duties very well.

Dr. Bull said that before the times of antiseptic surgery bony union was so rare that surgeons usually contented themselves in endeavoring to obtain short ligamentous union; but with the advent of modern methods bony union was eagerly sought after. Much was expected from these new methods, but they were soon found to be dangerous, and rapidly fell into disfavor.

His paper was based upon the histories of twenty-two cases of fractured patella which had been treated without operation, and had been followed for periods varying from one year and nine months to thirteen years after the injury. There were sixteen cases of primary fracture and six of refracture; but as the latter class cannot be expected to yield such good functional results as the former, they were not considered. The results of treatment were classified under three heads, viz.: (1) Functionally perfect—ten cases, in which flexion and extension of the limb have been complete and strong, the ligament firm, and little or no atrophy of thigh; (2) good—four cases, in which flexion and extension were imperfect, but the joint was sufficiently useful to satisfy the demands of the patient's occupation, and only showing weakness after unusual exertion; and (3) bad—two cases, in which there was no power of extension, and the patients were compelled to wear supports, or to walk with a cane. Three-fourths of these patients were between the ages of twenty and forty years, and their occupations were sufficiently laborious to test the efficacy of the treatment. Bony union was obtained in one instance, and it is noted in two others that there was no appreciable separation of the fragments; while in the remaining cases the average length of the ligament was nine-tenths of an inch. This corresponds very well with the statement usually made that the length of a useful ligament varies between one-half inch and one inch. In one case the ligament was observed to shorten during a period of some years, owing to the formation of bone in the ligament.

Out of six cases of refracture, three occurred within two months after being discharged from the hospital, and in one case the lower fragment was fractured while the ligamentous union remained intact. The results in two

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cases out of this series were surprisingly good, and in the remaining four there was deficient extension, three having long ligaments.

Neither the age of the patient nor the character of the injury seemed to influence the result. From the first series good results were obtained in eight out of ten cases by the use of simple retentive apparatus, provided no accident endangered the newly formed ligament. As refractures were considered accidents, they should be included with those giving a less favorable although still a very good percentage—seventy-three per cent.

If the cases were seen soon after the injury the knee was slightly elevated, equable pressure was made by means of cotton compresses and snug bandaging, and, after an average period of five days, the limb was elevated and a gypsum bandage applied, the fragments being approximated by loops of plaster. It is possible, by proper application of a figure-of-eight bandage, not only to tilt the fragments but to separate their margins. After the effusion has subsided, there is no tendency to drawing up of the fragments. After the gypsum bandage has "set," the patient is allowed to sit up. Six or eight weeks later this bandage is removed and a posterior splint, or the posterior half of the gypsum dressing, is bandaged to the limb during the day. At this period vigorous shampooing and the use of electricity should be begun. About the third month extension is usually good, although flexion is only possible to about forty-five degrees. The patient may now be allowed a cane, but the use of knee-caps should be discouraged, and passive motion is rarely advised. The patient is to make daily efforts to bend the knee slightly, the foot being upon the floor. There is no liability to accident by this method.

Many surgeons are still opposed to the use of plaster-of-Paris, thinking that it causes atrophy and interferes seriously with the circulation; but the use of plaster is not recommended by Dr. Bull until the swelling has subsided, and cotton is always applied underneath.

It will be seen that the total time of treatment is about six months; but the patient is confined during six weeks and allowed only moderate movement for six weeks more. The time of treatment cannot be advantageously shortened. If the ligament and joint functions begin to weaken, it is advisable to resort to wiring the bone, and the operation is easier at this time than subsequently when the fragments are more widely separated. Cases of refracture should be treated upon the expectant plan until it is apparent what the results will be.

Malgaigne's hooks have been employed both with and without antiseptic methods, and Treves speaks favorably of them; but it does not seem that there is anything gained by their use. All such measures aim to secure bony union, but they are both risky and meddlesome.

In the discussion that followed, DR. L. A. STIMSON said that refracture was common after all methods of treatment, and we were not justified in claiming bony union for any case unless an ocular demonstration of its existence by a section through the parts had been made. The most we could claim is an absence of independent mobility. In an extensive review of the literature of the subject, he had been impressed with the widespread opposition to arthrotomy and metallic suture. During the past fourteen months he had treated twenty-four cases by a new method of subcutaneous suture, which had been suggested to him by his house-surgeon, Dr. Clark. The operation had generally been performed under cocaine anæsthesia, the cocaine being introduced at four points, two above and two below the fracture and a little to one side of the median line. Incisions half an inch long were made at these four points, and a stout silk suture introduced with a large half-curved Hagedorn needle. The ligature was first passed through the ligamentum patellæ, reëntered again at the point of exit and passed upward in front of the fragment and brought out at the upper opening on the same side. It is again reëntered and passed close to the patella, catching the substance of the quadriceps; and in the same manner carried back to the starting-point. By means of tenacula in the quadriceps and patellar tendons, the fragments are approximated and held firmly until the suture is drawn tight, tied, and the ends cut off. As the punctures permit an escape of blood from the fracture, and open a communication with the joint, the operation is not entirely devoid of risk; but so far there has been no suppuration within the joint. An antiseptic dressing is applied, and the limb placed on a posterior splint for one week, when the incisions are found healed. Plaster-of-Paris can then be substituted and allowed to remain on for one month. When a second plaster splint is required, it will only be necessary to wear it during the daytime. The results so far have not been very favorable, but there are reasons for believing that these can be much improved.

DR. CHARLES MCBURNEY had always been opposed to operations for fractured patella except when the fracture was compound, as he considered it quite dangerous, and the functional results obtained by the non-operative method were too good to justify the taking of such risks. He had been able to secure excellent approximation by means of plaster extending over the quadriceps tendon and down the leg, and covered with plaster-of-Paris. An opening in the plaster-of-Paris, and a proper arrangement of buckles, enable the surgeon to secure a progressive approximation of the fragments. In this manner, he had seen a gap of one and a half inches reduced to one-quarter of an inch in ten days.

DR. CHARLES PHELPS had frequently made use of the open method of operation and did not fear the results.

DR. WILLIAM T. FLUHRER'S practice was to operate upon recent fractures of the patella, as it assisted an accurate diagnosis, and secured the quickest and fullest functional results, at the same time exposing the patient less to the danger of refracture. The infolded soft parts often interfered greatly with securing proper results, and he had been led to introduce a needle subcutaneously to push aside these tissues so as to free the fragments and obtain bony crepitus. There had been no accident in his operative cases, some of which were presented to the Section, and confirmed the statement concerning the good results to be obtained by this method.

In view of the strong opinions expressed by some against the operative method, and the excellent results exhibited by those who advocated operative procedures, Dr. Abbe said he thought that we should conclude that the operation and not the method had failed.

DR. BULL, in closing the discussion, said that while appreciating the brilliant results obtained by operations, and in spite of their excellence and rapidity, he considered the methods too dangerous for general endorsement.

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He had tried various devices which were attached to the skin for the purpose of securing better approximation of the fragments, but they had failed of their object,

NEW INVENTIONS.

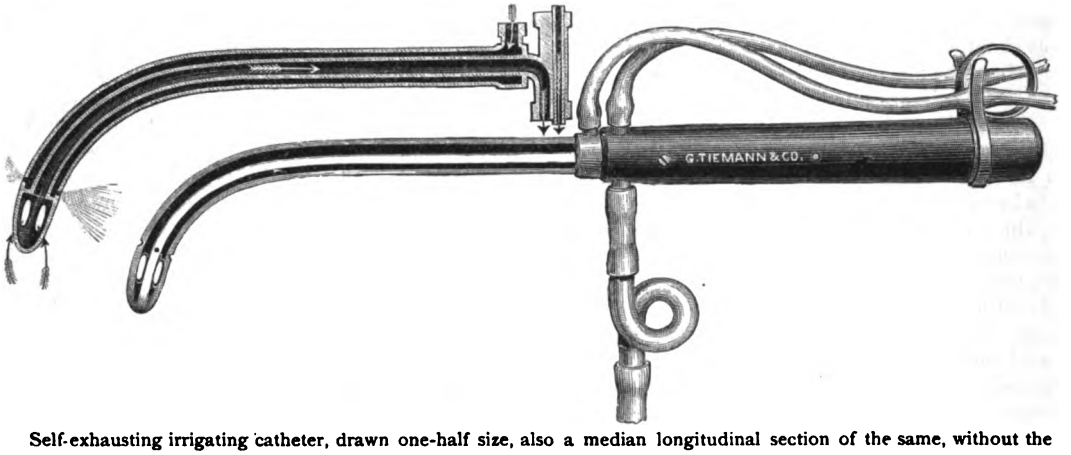
A SELF-EXHAUSTING IRRIGATING CATHETER.[1]

BY NATHAN G. BOZEMAN, PH.B., M.D.,
GYNECOLOGIST TO ST. FRANCIS'S HOSPITAL, JERSEY CITY; MEMBER OF THE NEW YORK COUNTY MEDICAL SOCIETY, ETC.

THE double-current catheter, or irrigating tube, which I have been using for some time, was originally devised by me for treating chronic cystitis in women after a fistulous opening had been made in the bladder, for free drainage and physiological rest of that organ. As the assistant of my father, Dr. Nathan Bozeman, I have carried out this treatment under his directions in a great many of his patients, hence the excellent opportunity for perfecting the instrument. By its use medicated fluids can be sprayed against the distended walls of the bladder in very fine jets, and be quickly removed, together with the urine, as fast as it accumulates in the most dependent portions of its cavity. The patient being in the supported knee-elbow position, or on the side, douching of the organ can thus be accomplished without wetting the clothing or causing vesical tenesmus.

The instrument consists of an outflow tube and supply tubes, which are made of silver or hard rubber, and a handle for convenience of manipulation. The four supply tubes, each having a calibre of one-sixteenth of an inch, are attached along the sides of the outflow tube. They are provided with small lateral openings near their closed extremities. The outflow tube has a calibre of three-sixteenths of an inch, it is conveniently curved, and at the junction with the handle it is bent downward at right angles. There are also lateral openings near its closed end. United to the short portion of the outflow tube, which is bent downward, and parallel to it, is a tube having a calibre of one-thirty-second of an inch, it projects upward sufficiently to form a connection for a soft-rubber tube. Suspended from the open end of the outflow tube and the lower end of the short vertical tube, is a series of small coils of glass tubing, united one above the other by soft rubber tubing, and from the lowest one hangs a long rubber tube. The handle is rounded, and is four inches long, and at its extremity it is provided with a ring and steel clamps for compressing two soft-rubber tubes.

When I use the instrument for washing out the bladder, the curved extremity is passed into its cavity through the fistulous opening in the vesico-vaginal septum, the patient being in the supported knee-elbow position, with the perineum elevated by a perineal retractor. In this position, and under these conditions, the bladder is usually distended, and the extremity of the catheter can be moved about in its interior, barely touching its walls. Now the irrigating fluid is allowed to flow into the instrument by freeing the two rubber tubes from the clamps which compress them. A very small portion of fluid passes directly into the coils of glass tubing, collecting in them and partially filling them, when it is precipitated *en masse* downward, carrying air with it, which is exhausted from the outflow tube. And the fluid which collects in the fundus of the bladder, after having been sprayed against its walls through the small openings near the extremity of each of the supply tubes of the catheter, is steadily drawn up and evacuated.



Self-exhausting irrigating catheter, drawn one-half size, also a median longitudinal section of the same, without the handle. The arrows indicate the directions of the currents.

I find for irrigating the bladder that two glass coils and a rubber tube suspended from them, twelve inches long, produce sufficient exhaustion. A continuous return current through the outflow tube of the instrument is thus kept up, and all the fluid, after lavage of the bladder, is emptied automatically in a vessel placed on the table between the knees of the patient

The deep grooves along the catheter were intended to serve as tubes when the mucous membrane comes in contact with them, in the expectation that through them air would be drawn into the instrument, thus preventing the sucking in of the mucous membrane, and the occlusion at times of the openings in the outflow tube. This often did occur, so I have been compelled to cut off one of the supply tubes and establish a permanent communication with the air, through it, with the inside of the outflow tube on a level with its lateral openings. Any possibility of suction on the mucous membrane is thus prevented.

[1] Presented at the meeting of the Alumni Association of the Woman's Hospital, February 27, 1889.

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The employment of continuous suction in a very simple and efficient way in the application of this catheter, makes it different from any of the double-current catheters that I have seen. Besides the use for which I devised this instrument, I have employed it with great satisfaction for irrigating deep sinuses and pus cavities. During the operation for closure of urinary fistula, in the supported knee-chest position, it is invaluable for keeping the cavity of the bladder and the wound free from urine and blood.

9 WEST THIRTY-FIRST STREET, NEW YORK CITY.

CORRESPONDENCE.

ST. LOUIS.

To the Editor of THE MEDICAL NEWS,

SIR: Our Health Commissioner has just issued the usual annual summary of mortality statistics for the last year, from which it appears that the total number of deaths in St. Louis during 1889 was 8004, being 1011 less than in 1888, and 1151 less than in 1887. The annual death-rate per 1000 during the year in a population estimated at 450,000 was 17.78.

Of the total deaths, 2047 were infants under one year, and 3149 were children under five years; 4383 were males, and 3621 were females. There were 63 deaths from measles, 114 from scarlatina, 346 from diphtheria, and 93 from croup; 146 from typhoid fever, 223 from malarial fever, and 367 from diarrhœal diseases in children under five years of age. The total deaths from zymotic diseases were 1773. There were 655 deaths from consumption, 598 from pneumonia, 337 from bronchitis, 408 from convulsions, 255 from Bright's disease and nephritis.

The number of births reported during the year was 11,906, of which 11,390 were white, and 516 colored; 6088 males, and 5818 females.

The epidemic influenza did not pass by St. Louis altogether, but the visitation was very light as compared with that in several of the Eastern cities, and there were no special features that require mention.

In the St. Louis Medical Society a periodical source of contention has been the question, How and by whom shall the proceedings of the Society be published? For years the *St. Louis Medical and Surgical Journal* published them without competition. Later the *Weekly Medical Review* entered the field, and, as a weekly journal, secured the right to publish them, as offering more favorable facilities than a monthly journal well could. Later there was a disagreement between the publishers of both these journals and the Society, and the old *Courier of Medicine* published the transactions for a year. At the commencement of this year the war broke out again. Proposals from different medical journals were received by the committee and presented to the Society, and it was seen that the proposition of the revived *Courier of Medicine* was in some respects more liberal than that of the *Weekly Medical Review*, although the latter had the manifest advantage, for a society holding weekly meetings, of giving opportunity for more prompt publication of papers and discussions. When the vote was taken, the result was declared to favor the *Weekly Medical Review* by a vote of eight to seven, its editor having voted for his own journal, while the editor of the other journal had refrained from voting at all. At the next meeting evidence was given of active "wire-pulling" by the editor of the *Courier*, for the action of the preceding week was then reconsidered, and by a vote of twenty-nine to nine the publication was awarded to the *Courier*.

Two or three volumes have been published here recently which I may mention as of some interest to the profession. The first is entitled, *Directory of Physicians, Dentists, and Druggists of Missouri, 1889*. So far as the *Directory* itself is concerned I have no special criticism to offer, but in the advertising pages the publishers have directly and grossly insulted the reputable medical schools which patronized them, and the members of the profession who subscribed for the book, by introducing several disgraceful advertisements of quack remedies: such as "—— Cancer Hospital Great Infallible Indian Cancer Plaster; the only institution in the world where cancers and malignant tumors are permanently removed without using the knife, ligatures, or caustics," etc. Another "ad." is that of "Mrs. Dr. ——, the Female Specialist," who sets forth that she has "a lying-in hospital for female complaints." Another female practitioner advertises a variety of treatments, and, among other specialties, announces that "magnetism is the supreme feature of my baths; hence patients have choice of male or female assistants." Another practitioner announces that he can be consulted as an allopathic physician, but prefers under all circumstances to treat all diseases of either sex, and of any age, by the new medical system called "Dosimetry," etc.

But to turn to a more pleasant subject, I have just received a copy of Dr. W. A. Hardaway's *Manual of Skin Diseases*, a volume of some 400 pages, which not only does credit to Dr. Hardaway's ability to describe clearly and concisely the various diseases affecting the cutaneous surface, but gives the treatment which he has personally found to be most successful in these diseases. Dr. Hardaway's numerous friends will be glad to see this demonstration of his complete restoration to health after having suffered for a time from nervous prostration superinduced by overwork. I am happy to be able to state that there is no foundation for the story which was circulated some time ago, that he had lost his eyesight, further than that he dropped and broke a pair of eyeglasses which he had worn for some years.

Dr. D. C. Gamble, who has been connected with the Faculty of the Beaumont Medical College since its organization, as Professor of Otology, has tendered his resignation, to take effect at the end of the present term. It is probable that the chair which he has held will be combined with that of Ophthalmology, now ably filled by Dr. A. Alt.

VIENNA.

To the Editor of THE MEDICAL NEWS,

SIR: At last we have heard the results of the bacteriological studies of influenza. Dr. Weichselbaum, Professor of Bacteriology at the Vienna University, and the discoverer of the coccus of pneumonia, has reported his work at a meeting of the faculty. He made a careful study of the sputum, nasal secretion, and blood of twenty-one cases, and in all of them the utmost precautions were used to get pure materials for examination.

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Not only were microscopic examinations made, but in every case experiments upon animals were made with pure cultures; so that the utmost scientific care was exercised. He found in all the material examined large numbers of the diplococcus pneumonia, and in the pure cultures his results were verified, for the bacterium found could be distinguished in no way from the diplococcus. It had the same light-colored capsule and the characteristic appearance, and in pure cultures on agar and on gelatin the colonies were exactly the same. In his experiments in inoculating the smaller animals the results were the same as after inoculations of the diplococcus pneumonia. In a few cases streptococci were also found, but in small quantities. In his *résumé* Weichselbaum concludes that, in regard to the etiology of influenza, there are two possibilities; either the pneumonia coccus is the cause of the disease, or else it is caused by an unknown microörganism the action of which brings about conditions that make an excellent soil for the diplococcus, and diplococci very early entirely supplant the primary micrococci. The clinical history gives many points in favor of the first theory; the sudden chills and the rapid course and the great variety of air-passage complications. But we cannot explain the great differences between influenza and pneumonia if the same germ is the cause of both, unless we assume that the coccus has been so varied by unknown meteorological circumstances as to cause marked differences in its action on the human organism. The second theory—namely, that the diplococcus is merely a secondary infection, has many analogies, especially in the etiology of the exanthemata, and is the theory to which Weichselbaum himself inclines. The pneumococcus has often been found in healthy sputum, and grows exceedingly well on inflamed mucous membranes. It has great vitality, and probably the unknown influenza coccus has not. And thus the question stands. There have been many investigations throughout Europe on this point, but nowhere have more definite results been reached.

NEW YORK.

To the Editor of THE MEDICAL NEWS,

SIR: The proof of the old-time proverb, "It is an ill wind that blows nobody good," has been again exemplified in the history of the recent fire at the Presbyterian Hospital, and although that calamity was mercifully exempt from the usual horrors attendant upon a fire in a hospital, it has not been allowed to pass without impressing a useful and much-needed lesson upon the community. Among the first to heed the note of warning were the Commissioners of Charities and Correction, who ordered a general inspection of all the institutions under their care with especial reference to the provisions against fire. I say a much-needed lesson, for, outside of this department are to be found hospitals well appointed and well managed in most respects, which are still very deficient in their arrangement regarding fire. It is true that some of them have instituted regular fire-drills for the purpose of familiarizing those in charge, with the best line of action to be pursued in such an emergency; but the practical difficulties in the way of carrying out the exercises efficiently in a house filled with the sick and helpless are so great as almost to neutralize the good derived from such a system. The real danger, in some instances, lies in the faulty construction of the buildings, and not in the want of provision for extinguishing fires. Of what avail is it to have the most modern fire apparatus, ready for action at a moment's notice, and a corps of trained attendants capable of using it efficiently, if connecting corridors, elevator shafts, and sometimes a central chapel, acting like immense chimneys, assist the spread of the flames and convert the building into a veritable death-trap? A few hospitals have beds surrounded by curtains which are a constant menace, and I have often trembled at night when the orderlies were going from bed to bed, examining surgical patients by the light of a flickering candle, as I thought how easily a sudden gust of air might start a conflagration. I would not be understood as opposed to some contrivance for the privacy of the patients; but why use curtains, which not only increase the risk of fire, but furnish admirable lodging places for disease germs? It would not be difficult to secure privacy to the patient and avoid these undesirable features, by substituting for the curtains light wicker screens, such as are used about the beds in some of the London hospitals.

Dr. Frank Ferguson, who has just been appointed Professor of Pathology in the New York Post-Graduate Medical School, entertained the Clinical Society connected with that school, by a paper on the "Plasmodium Malariæ and its relations to the Malarial Fevers." This difficult subject, with which even a number of our active workers in pathology are but little acquainted, was made doubly interesting by the fact that the paper was based upon actual researches which had been carried on for some years by Professor Ferguson. He said that the clinical symptoms of malaria had been produced in animals by germs which had been isolated and cultivated, and that these germs had been afterward found in the bodies of the animals. Similar germs isolated from the marshes of malarial districts had been found to produce a like train of symptoms, and the pathological lesions characteristic of malaria had been observed after death; but strangely enough, the bodies which had been introduced were not found. It had occurred to him that it was possible that these germs had taken up the coloring matter of the blood and had become deeply stained by it; and he thought it possible in this way the changes which had been studied under the name of the plasmodium malariæ had been produced. His experiments made him feel positive that he could reproduce in animals at any time these changes in the protoplasm of the blood-cells.

Dr. J. M. Byron, of the Loomis Laboratory, it discussing the paper, said that while studying the blood in other diseased conditions, and noting the effects of various reagents, he had been struck by the similarity between the changes so produced and the so-called plasmodium malariæ of Laveran. Other pathologists had had a similar experience, and he was by no means convinced of the pathognomonic and bacteriological standing of this plasmodium. It has no definite form, and most of its forms and relations can be explained by contraction and change of the protoplasm of the red corpuscles of the blood—changes which are produced probably by an unknown bacterium.

The same gentleman told me that although attempts

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have been made at the Loomis Laboratory by himself and others to hunt down the "influenza bacillus" of Seifert, and ascertain its relations to "la grippe," their work had been interrupted by the rapid subsidence of the epidemic, and they had been unable to arrive at any conclusions of practical importance.

INDIAN MEDICINE.

To the Editor of THE MEDICAL NEWS,

SIR: A paragraph in THE MEDICAL NEWS of January 18th reports Major Powell, of the U. S. Geological Survey, as saying that "To the Indian mind there is no medicine except sorcery."

If I understand this assertion correctly, it contains either more or less than the whole truth. I do not contend, however, that the use of "drugs" by savages is often, if at all, dictated by knowledge of their therapeutic effect, if they have any. But after their own fashion, they use many articles gathered from forest and plains.

If we take the Sioux or Dakota tribe for an example, we find that their name for doctor means "herb-root man." They sometimes apply to him also the name of "spirit man," as with them, if not with all savage tribes, the offices of doctor and priest are united in the same individual. Their pathology is spiritual, and the doctor must deal with spirits; but in doing so he finds roots and herbs scarcely less important as means than his rattle and his vocal chants. Many of the herbs used by him are well known to all who live in his region, but he generally manages to have some which he assumes to be known only to himself and the gods, and which are guarded with an air of secret wisdom.

A physician who labored among the Dakotas in Minnesota as far back as 1836, reported their medicine men as using a local species of euphorbium, with violent purgative effect, and as dressing external injuries with the inner bark of the pine. Also as using the American milk-weed, and quite a variety of roots and herbs and barks in no very intelligible manner—which we can readily believe.

I saw an Indian use dry earth as a dressing for gangrene. This, with the pine bark as a local dressing, points to something approaching rational surgery. It was also the common report amongst white "squaw men" and "half-breeds" that the old midwives possessed an herb or root which produced abortion, and which they sometimes brought into requisition for jealous wives who wished to "spite" their husbands for bringing into the wigwam a younger and fairer bride. Of this means of punishment I have no practical knowledge, though I have had to do with cases where the hunting-knife and the strychnine-bottle were resorted to as a more direct means of vengeance.

In 1869, being full of the missionary spirit, I was sent by the Commissioner of Indian Affairs as physician to one of the new agencies established in Central Dakota under the Sherman Commission, and continued in that capacity until the spring of 1876—long after the missionary spirit had left me.

These Indians were fresh from the plains and in constant intercourse and fellowship with those who still remained obdurate under Sitting Bull, Red Cloud, and lesser lights, and I had thus a chance to study the Indian in all his native wildness and ferocity. Possessing a soul superior to professional jealousy, I often shared the same patient with the native practitioner, who did not always receive my visits with that air of cordial generosity which should characterize so noble a calling. As often as otherwise I found my carefully compounded prescriptions hung upon the "medicine pole" outside the teepee, but I never showed any resentment on that account. I still loved good Indians, and it only required the shooting of three or four of my civilized companions within sight of the agency to convince me that none were good but those who occupied the scaffolds of the dead. I was correct in the main, but there was an occasional rare exception, of whom I love to think, now that they are dead also. The superstition which fills the savage mind concerning priests and doctors doubtless saved me from being shot down in my wanderings in search of the good that I might do.

Every family had its "medicine-bag" hung on a pole outside the teepee, but in spite of this the evil spirits would slip in now and then. If the patient was very ill, the teepee was abandoned to the sufferers and the doctors, the family taking refuge elsewhere. The use of the rattle was only limited by the endurance of the medicine man. His hideous vocal accompaniment was limited by the endurance of the larynx. When exhausted with these efforts the doctor would grab his gun with the air of a man who was struck with a new idea, and run out and fire at the spirits. Then while gaining further strength, he would burn aromatic herbs upon the coals in the fireplace, until the teepee was odorous with more pleasant things than usually greeted the civilized nose in an Indian habitation. He would also make decoctions and warm infusions, some of which he would cause the patient to sip, but the major part went into his own mouth, and was thence spurted over the body of the patient.

If there was severe local pain, the doctor would suck the part, first concealing some strange object in his mouth, which in the end he would exhibit as the offending evil which he had sucked out, when, if the patient was endowed with proper faith, the pain would cease. Another feature of the trick was to spit blood which was supposed to have come out with the offending object, but which he drew from his own gums by irritating them with the foreign body.

As a case in point, I was attending a young woman suffering with acute articular rheumatism. I arrived at the teepee one day to find the medicine man sucking at her knee. In due time he raised his head suddenly and drew his hand with a quick motion over the knee, when something struck the opposite side of the teepee and fell to the ground. With an air of profound gravity he walked over, picked it up, and exhibited to the patient an eagle's claw, wet with saliva, and assured her that that had been causing her pain, and that he had sucked it out. I looked duly surprised, gave the patient a full dose of opium, and agreed that she would feel easier.

So we see that the Indian uses "medicine" for irrigation, for fumigation, and for imbibition; and that he is also a masseur and faith-healer.

In surgery, as we have already seen, he uses barks, roots, leaves, herbs, and dry earth for dressings. He also constructs good splints from small, flexible willows,

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which accommodate themselves to the shape of the limb, and by numbers supply the needed strength. But in the treatment of fractured clavicle he is a failure, judged by the results I have seen.

They employed one means of treatment which I sometimes utilized. That was the hot-vapor bath. Their mode of using it was to construct a small "wicking-up" of willows, large enough to sit under, which they covered with robes or blankets. Large stones, well heated, were placed in the centre. Stripped and crouching about these stones, the patient poured water upon them, and in the heated vapor thus produced would sweat very freely. This device was in use by the Dakotas early in the century, and how much earlier is not known.

One old doctor assumed an air of fraternity toward me, and would come into my office with a look and a greeting which said plainly, "we know how to fix 'em." He observed quite early in our professional acquaintance that when the bowels were torpid, the medicine which I gave made them act; and that if there was too much action, my medicine stopped it. The fact took great hold upon him, and he came to me regularly for supplies of this medicine. I gave the pills in bottles which he readily distinguished, and the doses also were readily remembered. He also drew regularly supplies of camphor, but all that I could learn from him of its use was that he "made medicine" with it. He probably fumigated the teepees of the sick with it, and was thereby enabled to produce an odor which no other "medicine man" could produce.

He also wanted chloroform, but for obvious reasons I refused the request and assured him that it was "good medicine" for white men only. The virtue of the Sioux women in the wild state was superior to "the world, the flesh, and the devil." Applications were not very infrequent from enamored "warriors" for the medicine which, held to the nose, "made people sleep so that an arm could be cut off without awakening the sleeper." Many did not hesitate to say that they wanted to put it to the nose of the object of their adoration, so that they might accomplish what was otherwise a hopeless undertaking.

S. S. TURNER, M.D.,
A. A. Surgeon U. S A.

CAMP SHERIDAN, WYOMING,
February 4, 1890

NEWS ITEMS.

Cholera in Persia Apparently Abating.—From recent reports, through Russian channels, it seems probable that the cholera epidemic of central Asia is abating. In Persia the march of the disease has been checked by quarantines between the cities and the mortality in several of the infected towns is lower. In regard to Mesopotamia, also, favorable reports have been issued by the Turkish Sanitary Board; a report dated in January, goes so far as to say, "Mesopotamia is now free from cholera."

A Philadelphia Physician in Africa.—Dr. W. L. Abbot, of Philadelphia, has recently arrived at Zanzibar, from the interior of East Africa, where he has been engaged in making explorations and scientific collections, some of which are for the Smithsonian cabinets. Some of his expeditions into the Kilimanjaro table-lands were made in company with Mr. Thomas Stevens, the commissioner of the *World* to discover Stanley; and as a consequence, Dr. Abbot's experiences have been pretty fully described. One of the troubles that he and other explorers met with in Africa is leg-ulcer, which is largely in excess of any other disease. Dr. Abbot, writes a correspondent, "had his clinic, before breakfast, nearly every morning, and it seemed as if nine-tenths of his cases were leg-ulcers." Dr. Abbot was graduated from the University of Pennsylvania, in 1884.

The Diagnosis of Hydrophobia.—Dr. Gibier, of the Pasteurian Institute, in New York City, has received many letters of inquiry as to the diagnosis of rabies in dogs which have bitten human beings, and thereupon killed. In such cases, he requests that some part of the brain of the animal be put in glycerin, with as little delay as possible, and be sent to him. When this is done, but not otherwise, a satisfactory conclusion can be reached.

The Sale of Antipyrine Officially Restricted in Vienna.—The *British and Colonial Druggist* states that no less than seventeen deaths from overdoses of antipyrine occurred during a fortnight in Vienna. This was during the prevalence of *la grippe*, when the sale of the drug was enormous; and until recently it could be bought freely by the laity. Since then, and partly in consequence of those fatalities, the sale of antipyrine has been forbidden except upon the prescription of a physician.

The Oldest Living Graduate of the University of Pennsylvania.—Concerning the question of the oldest living graduate of the University of Pennsylvania, a correspondent calls attention to the fact that Dr. James Kitchen, of Philadelphia, was graduated from that institution in 1822, at the age of twenty-two years. He is now ninety years of age, and has been engaged in the practice of medicine for sixty-eight years.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 11 TO MARCH 17, 1890.

DAVIS, W. B., *Captain and Assistant Surgeon.*—The leave of absence for seven days, granted by Orders No. 9, Fort Preble, Maine, March 7, 1890, is hereby extended ten days.—Par. 6, *S. O. 58, Division of the Atlantic*, March 12, 1890.

By direction of the Secretary of War, RUDOLPH G. EBERT, *Captain and Assistant Surgeon*, now on sick leave of absence, is relieved from his present station, Fort Pembina, North Dakota, and will report in person to the commanding officer Angel Island, California, for duty at that station.—Par. 1, *S. O. 57, A. G. O.*, March 10, 1890.

By direction of the Secretary of War, JUNIUS L. POWELL, *Captain and Assistant Surgeon*, is relieved from duty at Fort Supply, Indian Territory, to take effect at the expiration of his present leave of absence, and will report in person to the commanding officer Fort Randall, South Dakota, for duty at that post, and by letter to the commanding general Department of Dakota.—Par. 8, *S. O. 56, A. G. O.*, March 8, 1890.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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THE MEDICAL NEWS.

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ORIGINAL LECTURES.

HEPATIC FEVER.

The Middleton-Goldsmith Lecture for 1890, delivered before the New York Pathological Society, Jan. 15, 1890.

BY WILLIAM PEPPER, M.D., LL.D.,
OF PHILADELPHIA.

MR. PRESIDENT AND MEMBERS OF THE NEW YORK PATHOLOGICAL SOCIETY: Your President's kind introduction adds to the embarrassment which I confess to have felt in endeavoring to select some subject which might more or less worthily occupy the attention of such a body; in casting about for such a subject, I found much difficulty, and that which I finally chose will possibly be regarded as scarcely appropriate. It is not wholly pathological, but partly clinical in its interest. The very name "hepatic fever" may seem more or less a misnomer. We meet with so many affections of the liver attended with fever, that it would be impossible to place in one group all to which this name might in one sense be applied.

It is true that, without calling in the assistance of our willing brethren, the laparotomists, we are, at times, unable to make an exact differential diagnosis, and are still forced to name the affection by the most prominent symptom. And I am sure you have all met with cases of lesion of the liver or of its ducts, attended with fever of the peculiar type I wish to describe, and in which the determination of the exact seat and kind of the lesion was difficult or impossible. I do not intend to speak of the more ordinary fever which attends many acute hepatic affections, which is merely a more or less severe continued febrile movement with moderate fluctuations. We note this, for instance, in acute catarrhal jaundice, or for a few days following the passage of a gall-stone. Nor do I now include that very interesting affection, known as Weil's disease, of which, I believe, I have seen three cases, although only in one have I a full clinical and pathological record. What I shall say is based on a study of twenty-one cases, where fever of a peculiar paroxysmal character appeared in connection with various hepatic lesions. It may either be a quotidian, a tertian, or a quartan; and I have even seen a double quotidian type. It is a distinctly paroxysmal fever, often ushered in by a violent chill, shaking the whole body of the patient. Sometimes there is only a slight rigor, sometimes it even comes on without any perceptible sensation of cold at all. This is followed by an unusually rapid rise of temperature, reaching as high a point even as 103°, 104°, or 105°, attended with distress, restlessness, thirst, more or less pain through the frame, and not rarely with vomiting; lasting for a few hours—from four or five to as many as ten or twelve—and terminating by a sweat, sometimes merely a moisture, sometimes a drenching sweat soaking the clothing of the patient and bed. This fever may be repeated, as I have said, at quotidian, tertian, or quartan intervals; a single paroxysm may close it, or there may be successive paroxysms, the intervals being sometimes regular and sometimes wholly irregular, amounting to days, weeks, or even months before another attack appears. After each paroxysm, jaundice makes its appearance as a rule; but sometimes it is only slight, or may even be absent, with at most a little yellowish discoloration of the conjunctiva and some darkening of the urine for a short time. In the majority of cases, however, the jaundice is decided, and may be intense, lasting for varying periods, sometimes days, sometimes several weeks, before passing away. At the moment of the occurrence of such a paroxysmal fever, there may or may not be severe hepatic pain. This pain may be wholly absent, and yet a hard chill, high fever, profuse sweat, and deep jaundice follow. Or there may be pain so severe that it forces the belief that a calculus is engaged in one of the ducts—the pain requiring hypodermic injections of morphine for its relief.

In bad cases, where such paroxysms recur, you can easily understand that the general health of the patient suffers severely. Anæmia is developed; there is marked loss of flesh; the digestive processes are impaired; and we find these paroxysms recurring with greater and greater facility; in fact, in this type of hepatic fever, an unfavorable prognosis often has to be made, and many such cases go on to a fatal result after a course of variable duration. But it is far from being always fatal, and in a certain number of cases—it has been my own good fortune to see quite a number of them—after having from fifty to one hundred paroxysms, complete recovery occurs, without anything to signalize the termination of the process—no morbid discharge, nor passage of a calculus, but a gradual subsidence of the morbid condition itself.

It is to this type of fever, paroxysmal and intermittent as a rule, with paroxysms occurring sometimes closely together, with a certain amount of febrile action kept up between them, that I would ask your attention this evening.

It is not in connection with the liver alone that we meet with fever of this type; I shall later ask attention to the resemblance existing between this and urethral fever, where we find in connection with certain morbid states of the urinary tract, febrile paroxysms having considerable analogy with those already described.

In trying to understand a febrile process of this kind, it is clear that we must have in view the general causation of fever, and I take it, that we are all agreed to-day that fever comes very often as a septic process from absorption into the system of some morbid, pyrogenic, poisonous substance. And, secondly, that fever is caused by a disorder of the nervous apparatus controlling heat production and dissipation, and that this disorder may either be centric directly, or may be induced by

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reflex irritation from some local disease. The reality of this last cause of fever, I think, may be demonstrated by the interesting physiological experiments which my distinguished friend, Dr. H. A. Hare, is bringing to a conclusion in the laboratory of the University of Pennsylvania, which show that a lesion which engenders fever will not do so provided all the nerve-trunks of the limb be severed; in other words, that in certain cases we must recognize, as a cause, the existence of a local lesion acting upon the heat-controlling mechanism at the centre in a reflex manner.

When we come to apply these general thoughts upon fever to the subject of fever connected with the liver, we would expect, I think, from the known antiseptic properties of the bile, to find certain difficulties in the development of fever; whereas, on the contrary, it seems to me, clinically, that there is no organ in connection with which we find more violent explosions of fever than we do in the case of the liver. It is very certain, however, that the entrance of bile into the blood cannot be brought into account to explain the production of fever. The injection of the entire bile, or the injection of bile-salts, both lower temperature, slow the pulse, and slow breathing, but do not create fever at all. Again, bile may lie for a long time, even for weeks, in an obstructed duct, and undergo no morbid change which makes it pyrogenic. It is perfectly true that the bile, a highly complex liquid, is singularly prone to undergo chemical change—bilirubin becomes converted into biliverdin in the easiest manner possible. But this is a chemical change, and is not one attended with the development of septic principles; so that the bile may remain a long time in the obstructed dilated ducts without undergoing changes rendering it capable of producing septic processes or pyrexia.

It seems, then, necessary, in these cases, that we should recognize the existence of additional elements; that there should be mixture with the bile of morbid discharges from the mucous membrane of the ducts; and it is very clear that this could be brought about in almost any case very readily. Thus, for instance, the passage of a gall-stone frequently leaves a laceration of the mucous membrane. We have, then, at once an abrasion, a source of morbid discharge and admixture with the bile of putrefactive matter, and this may be sufficiently considerable in amount to alter the character of the bile and start a septic process.

Or, again, this same lesion serves as the starting-point of reflex irritation, to disorder the heat-controlling mechanism. Note, in connection with this, that most of the cases we are discussing are attended with more or less obstruction of the ducts of the liver, and think how often it is, in studying our cases of liver disease, that we recognize the existence of such obstruction. Now, when the ducts of the liver are obstructed and distended with accumulated bile, not only is the bile absorbed into the lymphatics if the pressure goes beyond a certain point, causing absorption-jaundice, but this pressure upon the hepatic tissue about the distended ducts interferes powerfully with the functional activity of the liver.

The bile-secreting function of the liver is certainly far from being its only important function. I doubt not we have yet to learn of new functions of essential value; but there is one we already know enough about to assert that it is of immense importance, and, so far as the production of disease is concerned, of even greater importance than the bile-secreting function, *i. e.*, the ptomaine-destroying function of the liver.

The liver, then, possesses this extraordinary power of arresting pyrogenic substances such as the albumoses, whether hemi- or deutero-albumose, as they are passing into the system from the intestinal canal, and of destroying their morbid properties. So that, granting the functional activity of the liver, these pyrogenic substances are not able to penetrate the system and generate pyrexia.

If you have a condition of the liver where the bile-ducts are distended with accumulated bile, not only, I say, does jaundice occur, but inevitably we shall have this important ptomaine-destroying function of the liver more or less paralyzed; and there will pass on into the system, on account of this arrest of the functional activity of the liver, pyrogenic and poisonous substances which may be responsible for the fever and other symptoms which subsequently develop.

The mere absence of bile from the intestine in cases of occlusion, even though it be a complete absence, is not immediately disastrous provided the diet of the patient is carefully regulated, and especially if fats be excluded; for, in the absence of bile, the fats break up rapidly into highly injurious derivatives in the intestines.

Thus I may quote the case (No. 1) of William McF., a man aged sixty-five years, who was admitted to the medical ward of the Philadelphia Hospital on September 2, 1870. The history obtained showed that he had enjoyed good health until four months before admission, when jaundice gradually appeared. The yellowness grew steadily more and more marked, and he lost flesh and strength rapidly. He had never suffered from an attack of hepatic colic, and the present sickness had come on without pain. On admission the jaundice was intense, affecting the conjunctiva and the whole cutaneous surface. His mind was clear but dull, and he usually lay in an apathetic, lethargic state. His weakness was so great that he rarely left his bed, and his emaciation was extreme. There was entire anorexia; the bowels were constipated, and the stools grayish-white in color, tough, and very offensive. No free fat was observed in the stools. The urine was rather scanty, and contained no albumin, but was dark brown in color. Tests showed the presence of abundant bile-pigment, but on applying to it Hoppe's test for bile-acids, none were detected. The abdomen was meteoric. The area of hepatic dulness was normal, and no tumor or irregularity of the surface of the liver could be felt. The gall-bladder could not be detected. There was no tenderness over the liver. The skin was usually dry; perspiration, when it occurred, was deep yellow. There was at no time any fever.

At the autopsy all the viscera were deeply stained yellow. The kidneys contained numerous large cysts. The liver, of normal shape, was somewhat enlarged in size, but much more dense and heavy than normal, weighing five pounds. The liver tissue was deeply stained with bile, and coarse-grained, as though in the first stage of cirrhosis. The radicles of the gall-ducts throughout the organ were much dilated and filled with grumous bile. The larger branches of the hepatic ducts, as the transverse fissure was approached, contained numerous polygonal brownish-black gall-stones. The hepatic duct

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itself was enormously dilated (at least one inch in diameter), and was filled with very numerous calculi. These calculi, for the most part, measured one-fourth to one-third of an inch in diameter. There was one, however, fully two-thirds to three-fourths of an inch in its measurements, and with rounded edges, which was firmly impacted in the hepatic duct, just above its juncture with the cystic duct. The common duct itself was somewhat dilated, either from the previous passage of smaller calculi, or, more probably, from the dilating action of the impacted stone. The gall-bladder was considerably distended with light-colored bile, and contained numerous minute blackish calculi. There was no thickening, inflammation, or ulceration at any point of the biliary passages.

Here had been prolonged and entire occlusion of the hepatic duct, and yet no hepatic fever had resulted, because at no point in the biliary passages was there evidence of abrasion or inflammatory action; there had simply been resorption into the body of the normal bile. The patient's health had suffered from this protracted occlusion very much more markedly than was observed; for instance, in the well-known case reported by Bristowe, of London, where, for a long time, a patient was under observation with a biliary fistula. A tube had been introduced into the duct so that all the bile escaped externally, none entering the intestine, as shown by the condition of the fæces and of the local lesion, and yet there was very fair maintenance of the patient's health. There are a few similar cases on record. I will add the record of another interesting case of obstruction of the bile-ducts without fever, which was under my care lately.

CASE II.—H. N. B., aged seventy-five, began to feel sick December 20, 1887, at which time he weighed one hundred and sixty-five pounds. Twelve years previously, about 1876, he had a spell of pain followed by jaundice. He also had several spells about 1883. Subsequently he was pretty well up to September, 1887, after which he had occasional slight attacks of pain in the region of the liver, followed by a little jaundice, and then had a severe attack on December 20, 1887, and a second one in February, 1888. After this they occurred almost every week and the jaundice was constant, though fluctuating in degree and passing away somewhat in the intervals. He had no fever at any period in the course of his case, but had, however, occasional sweats, chiefly of the legs.

He came under my care in April, 1888, when he was losing flesh rapidly and was constantly deeply jaundiced. The urine contained bile, but the fæces were not putty colored. Examination showed slight enlargement of the liver, but no mass could be found nor was the gall-bladder distended. There was no tenderness on pressure over the liver, but only a deep-seated sense of discomfort. He continued to have occasional spells of pain, with deepening jaundice but without fever, until summer, when he went to his country seat and I saw him but occasionally. He now had a series of very alarming spells with slight chills, followed by pain, prostration, and sweating, but without fever; there was constant deep jaundice. On July 8th, he had an alarming spell, during which he fainted and immediately afterward discharged a large amount of golden-yellow thick bile by the bowel, estimated at two pints. He continued to discharge this in smaller amounts for three days and then seemed to improve. On July 28th he had his worst spell, fainting and lying unconscious for an hour and a half. After this attack the pain, which had always been over the liver, about the short ribs on the right side, suddenly changed and was in the middle, below the umbilicus; and he never had any pain in the hepatic region afterward. From this date until October 31st, every stool was examined but no calculus was found. The stools were very varied, sometimes in ribbon shape, sometimes round; but whether flat or round, they were always grooved as if forced past some round hard object. Their color was at times brown, green, and white, and at other times there was a light green liquid, but no pus was seen. From July to December he had numerous spells of pain always low down in the middle of the belly; and in such attacks he always had impaction of the cæcum, requiring laxatives, which would bring away ribbon-shaped fæces. After August his only treatment was rest, massage, careful diet, and olive oil. He was so reduced that he weighed only one hundred and ten pounds, and so very anæmic that he fainted on several occasions. His last spell of pain was on November 25th, after which he gradually and steadily improved. He is now in perfect health, in his seventy-eighth year, and weighs as much and can walk as briskly as at any time for years past.

I believe that this case was one of large calculus with accumulation of bile behind it; and that the calculus escaped into the intestine and remains fixed there, probably in a pouch of the colon, up to the present time.

I have spoken thus of the mere occlusion of the bile-ducts, and of the fact that they often give rise only to these distention-results without hepatic fever. It is probably true, as already stated, that extreme distention may favor the admission of pyrogenic substances by impairing the ptomaine-destroying function. But it must also be noted that after occlusion has lasted some time, the irritation of the wall extends to the connective tissue surrounding the duct, and we have set on foot a peri-angiocholitis, which may spread, more or less extensively, through the organ. Not only this, but when morbid discharges occur and mix with the retained bile, we may find either a large abscess or a number of small miliary abscesses scattered through the liver even to the capsule. Thus it is that in some cases of occlusion we have no fever, and in others the typical form described is present.

If we now try to explain the apparent periodicity which occurs in some cases of hepatic fever, it seems attended with considerable difficulty. If there be a fixed lesion, as, for instance, a suppurative inflammation of the gall-bladder, there we have a distinct pus-forming centre, and we may have a true pyæmia. Naturally, in such cases, we find an explanation for the febrile process with regularly recurring, often quotidian paroxysms, just as we find with a pus centre of similar character elsewhere in the body. But in those cases, and they constitute the majority of the cases, where the paroxysms do not recur every day or every third day, or with any regularity, and yet recur frequently, it seems as if we must assume the existence of a lesion not continually sufficient to cause fever, but which is extremely liable to be increased by external causes.

Take, for instance, a catarrhal angiocholitis, an inflam-

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mation of the bile-ducts of a catarrhal character, with a certain amount of thickening of the walls of the ducts, and a relaxed and enfeebled condition of the system; here is a state singularly prone to exacerbation and increase from external causes—such as a chilling of the surface or an indiscretion in diet; increased swelling of the mucous membrane and total occlusion of the ducts are the results, and there is a mixture with the bile of the morbid discharges from the inflamed mucous membrane, and at the same time an intense local irritation acting upon a system which has become highly sensitive.

I shall read to you the notes of a case where a long-continued series of these paroxysms were evidently explicable on this supposition.

CASE III.—H. B. D. came under my care on March 19, 1888. For many years he had been greatly exposed on the plains in the West, subsisting on coarse food. His best weight was one hundred and fifty, but for twenty years it was not above one hundred and thirty-five. In 1880 he had congestion of the lungs in Texas, and has been susceptible to colds since then, catching cold frequently every winter. He had diarrhœa through the summer of 1885; and again in the summer of 1887. He was in the West, exposed to intense heat, and had returned to Nantucket, where in August he had his first chill, and has had chills since then at irregular intervals, from daily up to seventeen days apart. The chills were severe at times, lasting distinctly for an hour. They were followed by fever (102½° to 104°), ascending for from six to twelve hours and then quickly dropping, so that the temperature within two or three days was almost normal. No treatment prevented their return. At about the same time (September, 1887), pain began to be felt in the right side; but on one occasion only were the chill and attendant pain so violent that hypodermic injections of morphine were required. Jaundice first appeared in October, 1887, and has continued more or less since, at times very deep, at other times almost absent. It always comes promptly after a chill, when the urine also becomes very high-colored. The stools are light but never clay-colored, and always have contained bile.

When I first saw him I made the following note: the chills now recur about twice a week, but irregularly. The patient has progressively lost flesh and strength. Ascites appeared February 15, 1888, and has increased, so that now it is very considerable. The urine contains a small amount of albumin, specific gravity 1021 to 1023; with abundant indican at all times. It was extremely difficult to obtain the reaction of biliary coloring matter, and repeated tests gave negative results. But on getting the urine perfectly fresh and preventing decomposition of the bilirubin by the addition of a little ether it was obtained. This observation seems important as bearing on the rapidity with which the organic bodies in the bile may break up, whether or not from bacterial action, and thus bearing also upon the development of irritating ptomaines in obstructed bile-ducts.

The diagnosis adopted was that of severe catarrhal angiocholitis, and the result verified it. Paracentesis of the abdomen was performed three times and several gallons of clear yellow serum were withdrawn each time. The patient was treated with absolute rest in bed, rigidly strict diet, and alternating courses of nitrate of silver and potassium iodide. He took at first twenty-five grains of silver, then after an interval of a month fifteen grains, after another interval fifteen grains more, and subsequently took it at short periods when spells recurred. Careful study showed that there had been no periodicity in the chills and that they had always been produced by exertion and exposure. He had finally become so sensitive that the most trivial exposure was sure to be followed by a severe chill. The ensuing fever, running up to 103° or 104°, was followed by profuse sweat, intense jaundice, and furious itching. His restless spirit led him to rise as soon as he was able, and immediately after doing so there would come another spell. In this way a certain semblance of regular recurrence was produced. After he was confined to bed the spells subsided and soon ceased; and he had none as long as I kept him in bed, which was nearly four months; at the end of which period he was almost free from jaundice, had no ascites, and had gained flesh and strength. He immediately began to overtax his strength and to expose himself. He would then take cold and have a recurrence of jaundice; but as the tone of his system improved, and with the improvement in the local conditions, there was continually less and less fever with the spells, though it was not unusual for it to go up to 101½° and 102°. The urine continued to contain a trace of albumin, and occasionally a hyaline cast would be found. The blood showed, at different times, from sixty increasing to eighty-five per cent. of hæmoglobin and from 3,400,000 up to almost normal of red-blood globules. His improvement was thus progressive but fluctuating and the case required constant, close watching. For instance, after being entirely free from fever and jaundice, all summer at Nantucket, he overtaxed and exposed himself in September, 1889, in New York, and brought on a chill with high fever and return of jaundice, which confined him to bed for more than two weeks. Since then he has improved steadily and is now in very good health. He is travelling in the West and is using a drachm of glycerin twice daily with potassium iodide.

In the following interesting case the symptoms and the course of the disease were very similar to those just narrated.

CASE IV.—Henry E. K., aged forty-nine, seen in consultation with Dr. E. E. Montgomery. He had catarrhal fever with jaundice, in August, 1889, and since then has not been well. He is a finely built, large man, who had not had a day's illness in thirty years. He is abstemious in habits, but has worked very hard and had much responsibility. During the past two or three years he has had several mild attacks of hepatic colic, but no jaundice. He was slightly jaundiced in September, and then had chills and fever of tertian type for several weeks, which were not controlled by quinine. The chills varied in intensity, being sometimes slight, but occasionally severe, with shaking. They occurred at different periods of the day, but usually in the morning, and were followed by fever, of from 102° to 104°, lasting into the night, and ending with a sweat during the night, so that the temperature was down on the following morning. The jaundice that followed was variable both in depth and duration. During twenty-four hours, when he

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had one of these spells, he passed about thirty-five ounces of urine containing 1.9 per cent. of urea, or about 300 grains in all. The appetite was poor, the stools clay colored and either loose or costive, but he had no severe pain or soreness in the region of the liver. On November 1st he had a sharp chill, and three days later a mild chill, and then violent pain and deep persistent jaundice. He continued to have chills and fever with increasing frequency throughout November and December; they would recur upon any exertion or exposure. Even after he was kept continuously in bed and upon an exclusive milk diet, he had several, but with decreasing severity and at increasingly long intervals. There were fulness and a slight sense of resistance in the region of the gall-bladder, with slight relative impairment of resonance over the duodenal region. No calculus was ever found in the fæces. He was confined rigidly to bed for a number of weeks. Repeated blisters were applied over the region of the gall-bladder. He took alternating courses of silver nitrate with opium and belladonna and of potassium iodide. The jaundice has now completely passed away. There has been no spell for a considerable period; he is rapidly regaining flesh and strength.

Without dwelling upon a question of diagnostic interest, I would call special attention to the importance of estimating the daily amount of urea excreted during such paroxysms, in order to establish or refute Regnard's statement that, in distinction with what occurs in malarial paroxysms, the amount of urea excreted is reduced in hepatic fever.

In considering the mechanism of attacks in such cases as these, we are struck by the presence of intense local irritation and of probable septic action. There is occlusion of larger or smaller branches of the bile-ducts— not necessarily of the main duct, since bile may be constantly present in the fæces — so that the network of ducts in only a small area of the liver may be involved and the mucous membrane be in a state of chronic catarrhal thickening. After each of the first few paroxysms the patient promptly returns to his usual habits and, sooner or later, induces a renewal of inflammation with obstruction and all the symptoms of an attack. The system soon passes into a morbidly sensitive and pyrogenic state; the heat-controlling mechanism becomes so easily disturbed that mere reflex irritation from a spot of exaggerated catarrhal inflammation may suffice to bring on a spell: but, in addition to this, the lesion of the mucous lining of the affected bile-ducts becomes more and more serious, and complete obstruction more and more readily produced. The morbid discharges from the inflamed mucous surface, which have been escaping with the bile, are then retained and induce septic changes in the contents of the ducts. There is thus the double element of acute local irritation acting on a system in a state of exaggerated sensibility, and a source of septic infection acting on a system where the ptomaine-destroying function of the liver is more or less impaired from the distention of the ducts.

It will be seen at once that in such cases the diagnosis from hepatic abscess must be considered with the greatest care. Certainly in Case III. (H. B. D.) it seemed at first as though there must be grave organic disease. A careful consultation was held in regard to laparotomy after the first paracentesis; but after repeated examination I was unable to satisfy myself that the condition justified even exploratory puncture. After prolonged confinement to bed, it became evident that the hepatic fever was not connected with a fixed suppurating centre from which septic absorption was taking place, but was connected with a varying degree of angiocholitis, and that the gravity of the symptoms was even more dependent upon the constitutional condition of the patient than upon the seriousness of the local lesion. The complete recovery of the patient has confirmed this view, and the rapid progress of H. E. K. toward recovery justifies a similar diagnosis in his case.

While it is true that, in occlusion of the ducts, there may be only dilatation of the smaller ducts above that point, with alteration and atrophy of the cylindrical epithelium and, of course, with some interference with the functional activity of the liver; it must not be forgotten that there is constant danger of such dilated ducts becoming attacked with inflammation which will rapidly result in more serious lesions. The retained bile becomes grumous and decomposed, containing shreds of detached epithelium and flakes of muco-pus; suppuration occurs in the connective tissue adjacent to the ducts, and a section of the liver may show disseminated miliary abscesses, sometimes closely clustered around the main duct and sometimes situated at the ends of minute ducts, so as to show as yellowish points immediately under the peritoneum. In other cases the process may go on to the production of a large single hepatic abscess. In cases where such suppuration is escaped, but where the angiocholitis is severe and deeply seated, the inflammation of the connective tissue around the ducts may go on to the gradual production of one type of cirrhosis of the liver; and you are all doubtless familiar with this development as a result of recurring catarrhal inflammation of the bile-ducts.

While, however, the cases above reported show that even when there have been very grave lesions, doubtless short of actual suppuration, the insistance upon protracted rest and rigid hygiene with suitable treatment may cause a gradual subsidence of the angiocholitis with return of the functional activity of the liver, I suspect that in the great majority of cases of hepatic fever, such as I am describing, there is pus present at some point about the liver. The suppuration may, as in the following case, be seated in the gall-bladder and also take the form of a miliary abscess close to the peritoneum; of course, defying operative interference.

CASE V.—Mr. F., aged sixty-three, consulted me on September 16, 1889. He had typhoid fever in 1882, and since then had often had pain in the back of the head. In the spring of 1887 he had several spells of hepatic colic—in all probability with gall-stone—followed by deep jaundice and intense itching. In the intervals between these spells he apparently regained his usual health, but for the past year had clearly been failing. He had lost much flesh, had suffered from insomnia, and recently albumin had been detected in the urine. He had also had several severe spells of hepatic pain, each time followed by fever and by local tenderness and deep jaundice. Thus, in March, 1889, he had a severe spell of pain in the region of the liver, lasting nearly all day, followed by jaundice for six weeks with severe itching; and another in April; but all was cleared up in June or

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July. He had another spell in August, and had been deeply jaundiced since then, and his general condition had failed more rapidly. I found his urine, with a specific gravity of 1010 to 1013, neutral or slightly acid, with a moderately thick ring of albumin, and with quite numerous epithelial and granular casts; no sugar. This condition of urine persisted until his death, on November 12th. There was marked tenderness over the bile-ducts. In spite of continued rest in bed, and with very careful diet, repeated small blisters, and, internally, silver nitrate with belladonna, and olive oil, he continued to have, at short intervals, recurring spells of pain, followed by deeper jaundice, worse itching, and more tenderness. In each of these spells there was distinct fever, but he had no severe chill until about November 1st. From then until death he had, almost daily, a violent chill with chattering of teeth, followed by rise of temperature to 105° and ending in a profuse sweat. The jaundice now subsided decidedly, although he still remained somewhat yellow. The stools had never been putty colored, but only yellowish, and now were brownish. The urine cleared up, but continued to show the features as before stated.

Post-mortem held thirty hours after death. Body somewhat emaciated; jaundice marked; rigor mortis present.

Abdomen alone examined. On section, there was found a good layer of fat in the subcutaneous tissue of the abdominal walls. All of the tissues bile-stained. Omentum very lightly adherent by fine bands to the parietes at scattered points. The liver protruded below the costal margin about three-fourths to an inch; was adherent over the posterior, upper, and right lateral surfaces to surrounding parietes of abdomen, by universal adhesion rather than by bands. This adhesion was most marked posteriorly, where considerable difficulty was experiened in liberating the organ. There was no collection of pus in the peritoneal or retro-peritoneal spaces. *Spleen:* Large, soft, and of a pinkish-buff color. Pulp diffluent and grayish, but without purulent character; typical high temperature spleen. *Kidneys:* Large and coarsely lobulated. Capsule stripped off with moderate ease. On surface of right kidney was a cyst of about the size of a marrowfat pea, containing dark fluid. Surface of organs finely granular. On section: vessels distinct and striation very plain; slight decrease of cortical area. Pelvis and ureters normal.

Stomach, duodenum, pancreas, and *liver* were removed together. The *pancreas* was partly bisected and a probe placed in the duct, which was found to enter the duodenum at the papilla in the normal position. The gland tissue was, to the naked eye, normal. The *duodenum* and *stomach* were opened along their anterior face, and were found to be normal. The pyloric ring was of proper calibre.

The *liver* was large, rigid, and firm, of a slate color, and with rounded edges, which gave a feeling of tenseness when pinched. Round ligament normal. The gall-bladder was only found after prolonged search and careful dissection through the surrounding thickened, dense connective tissue. On pressure, the gall-bladder was found to contain fluid, but could not be emptied by pressure. No stone could be felt through the walls. On opening, it was found to contain about half a drachm of thick, creamy pus. On careful probing, a fine orifice was found, which traversed a band of adhesion uniting the tip of the bladder to the duodenum and of a length of about one-half inch, the probe entering the duodenum about one inch below the pyloric ring. The hepatic artery was normal in size and position, as was also the portal vein. The common bile-duct was at first mistaken for the portal vein, by reason of its size. On slitting up the common bile-duct its wall was found to be thickened, its cavity dilated to finger size or larger, and its mucous membrane thickened, rugous, and in places mammillated. The cystic duct appeared as a cul-de-sac branching from the common duct and resembling it in calibre, character of mucous membrane, and thickness of wall. No communication with the gall-bladder existed. There was no ulceration of the mucous membrane, which was studded with the enlarged orifices of glands. On following up the dilated common into the dilated hepatic duct the same increase of calibre was found. This distention was traced up throughout the branches in the liver, even in some places to the periphery of the organ, where they resembled the ends of glove-fingers. On slitting up one of the ducts in the liver it was found to open into a marble-sized pus cavity close to the surface of the liver, the pus contained being thick and pinkish. The liver section was granular, coarse, friable, and nutmeg in appearance; evidently fatty and cirrhotic.

Again, in the following case, No. VI., very similar, though even more aggravated, lesions were fouud.

CASE VI.—I saw Dr. C. G. E., in consultation, in Binghamton, N. Y., on July 5, 1880. He was thirty years of age, and had enjoyed good health. His father and his younger brother had suffered from hepatic colic. He himself had been liable to such attacks for seven or eight years, but, after a trip to Europe five years ago, they seemed to have been arrested; but again, in the past three years, he had six or seven attacks. These apparently were attacks of catarrhal inflammation, with spasm of the bile-duct, but followed by very little organic change. On no occasion did they compel him to abandon his work. During the spring of 1880 he had been unusually busy, and had lost a good deal of rest. He was taken ill about the 14th of June with a chill, pain in the back, subsequent fever, and an intense pain in the region of the epigastrium and gall-bladder. Repeated hypodermic injections of morphine were needed to control the pain. There were several quite severe chills in the first thirty-six hours, with copious vomiting of bilious matter, while the temperature ran up after each chill to 105½°. He took calomel freely, in addition to the morphine; and later, when the tendency to return of chills showed itself, quinine was given in full doses. He continued to complain constantly of great pain about the gall-bladder. Vomiting ceased, but there was a tendency to hiccough. The temperature subsequently ranged from 102° to 103°. The tongue was heavily coated and dryish. There was a slight tinge of sallowness, but nothing amounting to marked jaundice. Examination showed an area of dulness in the region of the gall-bladder, extending three inches below the ribs. It was evidently not the distended gall-bladder, but appeared to be a partial enlargement of the right lobe of the liver, with matting of the adjacent tissues. It appeared indurated, and, on pressure, was very tender but without fluctuation. The fever was mark-

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edly hectic in type, with tendency to profuse sweats at night. The urine was discolored and contained bile. The stools were brownish and even at times blackish, though probably from bismuth. The urine contained no albumin. The general liver dulness did not extend above the normal limit, nor did it extend uniformly below the margin of the ribs; but there was a very distinct semicircular area of greatly impaired resonance and increased resistance, with exquisite tenderness on pressure, which extended from the right nipple line to the median line, and from the lower margin of the ribs downward about two inches.

He did well from July 5th to July 11th, when there was a violent chill, followed by very high fever and cold sweat, leaving him much exhausted. There was still no decided jaundice. After this, he continued to have irregular chills with high fever.

I visited him again on July 24th. He was then extremely weak, with a glazed, dry tongue and thready, frequent pulse. The abdomen was distended. The area of dulness previously described was even more marked. There were decided hectic symptoms, though no distinct chill had occurred since July 12th. As the signs of internal suppuration were so clear, I proposed an exploratory puncture, which was agreed to. I introduced a medium sized trocar about half an inch below the margin of the ribs, in the region of the gall-bladder, and in a direction upward and backward to a depth of two and a half inches. However, nothing but a few drops of blood entered the vacuum. He died within a few days afterward, and the post-mortem examination showed that there was no gall-stone and no obstruction of the main bile duct. The gall-bladder was the seat of chronic inflammation; its walls were thickened and its cavity greatly contracted. It contained muco-purulent matter. There was marked circumscribed plastic peritonitis around it. The central portion of the liver was much enlarged, and extending upward into this area for a distance of several inches, and occupying a space of four inches in width, there were clustered around the lines of the bile-ducts numerous small abscesses. These varied in size from a pea to a hazel-nut. In some instances the abscess cavity connected directly with the bile-duct, and it seemed as though it might be a collection of pus in a dilated duct. More probably, however, the limiting wall was of morbid formation. The bile-ducts throughout the liver were distended, and there were a few small abscesses at distant points of the organ, near the capsule.

Without entering into the highly interesting questions of diagnosis connected with these cases, I may point out that, in the latter case, the manifest enlargement of the liver in the region of the gall-bladder called for exploratory puncture, although the symptoms had led me to expect disseminated miliary abscess, as indeed was found to exist. Did time permit, I would be glad to describe to you cases of uncomplicated purulent inflammation of the gall-bladder with similar fever, and also the more familiar type of case where a large calculus escapes from the gall-bladder by progressive ulceration, opening into the intestine. I have seen a number of cases of this kind attended with typical hepatic fever of great severity, lasting for many weeks, and yet terminating in recovery. In one such case, which I have published elsewhere, the patient died, years after, of pneumonia and the autopsy showed complete obliteration of the gall-bladder and cystic duct, so that the middle finger could be passed directly from the duodenum into the dilated ducts of the liver. The gall-stone was found in one of the pouches of the colon. In the following case, on the other hand, there is every reason to believe that the recurring attacks of angiocholitis resulted in the formation of a single large hepatic abscess. It is notable that, in connection with the violent outbreaks of fever, there was neither intense pain nor deep jaundice. It can scarcely be doubted, however, that the origin of the pus evacuated by stool was from the liver.

CASE VII.—A. B., aged forty-six, married, has been exposed to very bad air in the court room, and had also drank water freely from a dirty receptacle. Last spring and through the summer, had intestinal indigestion, with tendency to looseness of the bowels. This fall he assumed additional labor as professor in a law school. After great exhaustion and loss of sleep, was taken with fever; heavily coated tongue, foul breath; temperature 103° to 104°; urine heavily loaded, and contained some bile. No characteristic spots, no nose-bleeding or bronchial symptoms. The case ran a course for three weeks like an irregular typhoid. He was apparently improving, and his temperature was down when he had a chill while in bed and while still on liquid diet, so that there was no apparent cause. The temperature went up to 104½°. The following day it fell almost to normal, but rose again in the afternoon, and so on three successive days. At this time there was discomfort in the hepatic region. The urine contained more bile, and there was slight jaundice. He again improved, and the fever almost disappeared, but in two weeks there was a similar recurrence of chills with high temperature. He had taken abundant quinine from the beginning of the case until this time. There was a repetition of the same hepatic symptoms. After this there was again improvement, even more marked than formerly. At this time there was a mild attack of phlebitis of the right leg. After this he again improved, and for more than three weeks was free from fever; he began to sit up for several hours daily, and cautiously resumed solid food, when, on December 20th, after taking a greater variety of solid food than he had done before, he was again attacked with chills, the temperature going up to 104° and over, and recurring on three successive days, with similar hepatic symptoms. At no time had the tongue become clean or the breath sweet, though it was much improved before this last attack.

He had taken, with apparent advantage, cool water enemata of about one pint, at a temperature of 65°; but despite extreme care in every particular and the most judicious treatment, the attacks of fever recurred. I saw him in consultation with Drs. W. W. Johnston and Busey, of Washington, on December 23, 1889. For a few days subsequently the hepatic fever was intense, the chills occurred more than daily; the subsequent fever was very high (104° to 105°) and the sweats profuse. On Friday, the 27th, he was extremely feeble and ill, and the chilliness and sweating were almost constant. He had a strong call to stool and passed six ounces of offensive, decomposed pus. On Saturday night he passed eight ounces of the same material. Following

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this discharge he made a gradual but complete recovery. The diagnosis of hepatic abscess in this case was supported by the exclusion, after repeated and searching examination, of any other source for the pus.

We have thus seen illustrations of various lesions in connection with which hepatic fever may present itself. We have also seen that similar lesions may exist without the production of this particular type of pyrexia. An attempt has been made to indicate some points of interest and importance in connection with the mechanism of its production. It has been assumed that this hepatic fever is not of very frequent occurrence, but although I may have happened to meet with a larger number of cases than should rightly fall to my lot, I am sure that it is not nearly so rare as has been represented. It seems important to place on record all carefully observed cases on account of the extreme difficulty in the differential diagnosis of the lesions, as well as in connection with the explanation of this type of fever and with the special conditions of the liver as regards its antiseptic secretion and its ptomaine-destroying function.

I will not attempt to speak fully to you of Weil's disease. This affection has only in the last few years been described as a separate entity; I do not think it comes properly at all under the class of cases I am describing. Everything connected with it seems to me to prove that it is a special infectious disease which requires much more close study in the hope of isolating the peculiar poison which produces it. The conclusions of all who have seen many cases are that it comes under the class of infectious fevers. It begins abruptly; it is attended with slight enlargement of the liver, and great enlargement of the spleen, and marked alteration of the blood. Between the fifth and seventh days the temperature falls, sometimes reaching the normal. About the tenth or twelfth day, there may be an accession of fever, though not a true relapse. There are characteristic pains in the limbs, especially in the calves, rendering motion intolerable. Jaundice is the most characteristic symptom. There is a difference of opinion as to whether the jaundice is from obstruction or alteration of the blood; my own judgment favors the latter view. There may be nephritic symptoms—albumin, tube-casts, and blood in the urine are common and very serious symptoms. Bronchitis, epistaxis, purpura, have all been observed as accidental complications. The disease has been observed in vigorous men of middle age; rarely in women and children.

One case, clearly to me of this nature, I find I have recorded in 1883 under the title of "acute infectious jaundice"—a name which I would at present suggest for this disease, until its nature is more accurately determined.

This occurred in the case of a travelling salesman, thirty-eight years of age, of muscular frame and excellent general health, whom I saw in consultation in the north-eastern part of Philadelphia, a healthy district. He had suffered from some malarial symptoms in previous years, but not recently, and during his last journey had not been in a malarial district. He had not been especially fatigued, and no reason could be assigned for the onset of the disease, which made its appearance immediately on his return to his home.

I found the patient, on the evening of the third day, with a temperature of 105°, with a wild, excited expression, injected eyes, wildly delirious, with a strong tendency to walk up and down the room, requiring the efforts of several men to restrain him. He complained of severe pain in the head and through the frame generally. He was already intensely jaundiced, the discoloration being peculiarly deep. This continued with increasing depth until his death, on the sixth day. He had already vomited several times; the stomach was non-retentive during the second day, but subsequently, with the deepening mental dulness, the stomach became quiet. The temperature sank to 102° on the third day, and continued to fall until toward death, when there was a rise again. The tongue was heavily coated, and soon became brown and dry. There were no pulmonary symptoms. The bowels were quiet, but responded to enemata. The spleen was distinctly swollen; the liver appeared normal in size. The pulse was rapid, 130, and this rapidity continued despite the deepening stupor and symptoms of blood-poisoning. The urine was not obtained until the end of the second day. It was then found albuminous, with epithelial and granular tube-casts. The amount secreted was small and intensely bile-stained. Death occurred in deep stupor, and was preceded by convulsive twitchings. The post-mortem examination showed no lesion of the brain; hypostatic congestion of the lungs; the spleen enlarged to double its size, very dark, and somewhat softened; the liver about normal in size, unusually dark, apparently very little, if at all, softened. Microscopic examination showed marked granular disintegration of many circumscribed areas of cells. The bile-ducts were pervious, and no obstruction was found to explain the jaundice. Of course, the mucous membrane may have been swollen during life, and the swelling have disappeared after death. There were no lesions of the intestinal glands; the kidneys were engorged with blood, and presented marked changes of infectious nephritis. The case was regarded as one of infectious disease of unknown type. Unfortunately, there were at that time no facilities for examining the blood and tissues carefully for microbes.

Clearly this acute infectious jaundice, which has close relations with *icterus gravis* of the older writers and of the present German school, has no relation whatever with the type of hepatic fever which I have described. It is connected in all probability with the entrance into the system of some specific infectious organism. I mention it to limit our field of discussion of hepatic fever more closely to the points I have proposed.

In conclusion: Although, as before stated, the term "hepatic fever" is more or less a misnomer, since there are various affections of the liver attended with other types of fever, yet there is a degree of usage which perhaps justifies retaining this name in connection with the particular paroxysmal fever I have described. It occurs at irregular intervals and is connected with angiocholitis, with more or less extensive occlusion of the ducts. At times there is no proof of the existence of pus or of septic action, although in the great majority of cases the pyrexia is associated with a purulent lesion at some point of the biliary canals. I will detain you but a moment to ask your attention to the analogy between these febrile attacks connected with the liver and "urethral fever," as it is often styled by surgeons. In doing so I will take the opportunity of referring to the admirable account of these two types of fever by Charcot, to whose instructive paper there

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has been comparatively little of value added. We are all familiar with the sudden explosions of high fever, 103° to 105° F., usually preceded by a chill, which may occur in persons who have been subject to prolonged vesical or urethral irritation, and where the thickening of the mucous membrane and other coats of the urinary tract has occasioned more or less occlusion associated with the production of morbid discharges. For although urethral fever may occur without a previous morbid state of the urinary passages, it is far more apt to arise in connection with such lesions. The irritation caused by the passage of a catheter or the sudden development of complete occlusion at some point of the partially obstructed passages may, under such conditions, give rise to violent outbreaks of fever which are evidently strictly analogous with those we have studied under the name of "hepatic fever."

I must here bring these desultory remarks to a close, trusting that the imperfect record I have presented to you will be the means of eliciting, from the immense wealth of pathological material which this city contains, fuller contributions as to the frequency of hepatic fever and as to the various lesions with which it is most often associated. With such extended studies it is not too much to hope that the special conditions or agents which in certain cases determine its occurrence may be investigated with complete success.

ORIGINAL ARTICLES.

LABOR COMPLICATED BY A FIBROID TUMOR; CÆSAREAN SECTION.[1]

BY JOSEPH S. GIBB, M.D.,
OF PHILADELPHIA.

THE case here reported, though not positively unique, was deemed of sufficient importance to challenge a careful study. In a series of seventeen cases of the Cæsarean operation tabulated by Harris, there were five in which the operation was done because of a new growth obstructing the pelvic outlet. In three of these the tumor was fibroid; in one, cancer of the cervix; and in the fifth, tumor of the sacrum. Two mothers were saved and three lost. In but one was an attempt made to remove the growth at the time of operation.

The subject of this sketch, L. J., a primipara, aged thirty-five years, had always been in excellent health, never having been confined to bed. In April, 1889, she married, and two months thereafter found herself pregnant. During her pregnancy she enjoyed exceptionally good health.

Her labor began Friday, March 7, 1890, in the early morning. During the day the pains were slight and infrequent, and the underclothing was soiled by a discharge of fluid with each pain. Late in the evening the pains became aggravated and I was summoned and saw her for the first time. The uterine contractions at this time were slight and infrequent, perhaps at intervals of half an hour. Her general condition was excellent; she looked forward to her labor with no gloomy forebodings. Vaginal examination revealed a capacious pelvis. The progress of the finger in the vaginal canal was arrested by the presence of a large body which was apparently felt through the thinned-out uterine wall. The os could not be detected by the examining finger.

To my mind, at this time, it seemed as though some portion of the child was presenting, pushing down before it the thin uterine wall and the upper portion of the vagina, and displacing the os to a position back of the symphysis pubis and out of reach of the examining finger. Abdominal palpation revealed a peculiarly oblique position of the uterus and its contents. The head was evidently below and to the left, and in the abdominal cavity, whilst the extremities occupied the right hypochondriac region. The fœtal heart-sounds were heard with the most distinctness about two inches below the umbilicus, a little to the left of the median line.

As the uterine contractions were very infrequent, and being uncertain of my diagnosis, it was deemed advisable to wait until there was sufficient dilatation of the os to enable the examining finger to be introduced. The next morning the condition remained unchanged—if anything, the uterine contractions were less frequent. The os still occupied a position too high to be reached.

The patient was still very cheerful and engaged in slight domestic duties about her room.

The next morning (Sunday, March 9th), a more accurate diagnosis was possible. The uterine contractions had increased during the night. The os was found high up, back of the symphysis, somewhat, though not fully, dilated—sufficiently so, however, to enable the examining finger to detect the head. It was now apparent that the body above referred to was not part of the child, but a *tumor* in the pelvic cavity, diminishing its calibre to such a degree as to preclude the possibility of the head passing. This tumor occupied the posterior portion of the pelvic space, encroaching forward to within one or one and one-half inches of the symphysis pubis. It seemed firmly fixed in the pelvic outlet. The diagnosis, however, was still very difficult, in consequence of the high position of the os. So, in consultation with Dr. James Collins, it was decided to anæsthetize the patient to map out more fully the position of the growth, and then to do whatever might be considered necessary while she was in this state.

Accordingly, a consultation was held at 6 P. M., March 9th, at which were present Drs. Collins, Holmes and Longaker, and myself. After the patient was thoroughly anæsthetized it was apparent to all present that the growth was a solid or semi-solid tumor, situated between the uterus and rectum, and pushing the upper portion of the vagina down before it into the pelvic cavity. It was equally apparent, the tumor being fixed and immovable, that it would be impossible to draw the head through the narrowed pelvic outlet without great and irreparable damage.

In the judgment of those present the only course

[1] Read before the Northern Medical Association, February 14, 1890.

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that presented was an immediate abdominal and uterine section. Accordingly, preparations were hurriedly made for the operation. Antiseptic and aseptic precautions were carried out, perhaps as fully as is possible in private houses in the humbler walks of life, and where little time is permitted for preparation. One vessel—a bowl—was reserved for cutting instruments; another for hæmostatic forceps, clips, etc.; still another for ligatures, sutures, and needles. The previously prepared antiseptic sponges were placed in a large basin. All these were covered with boiling water.

The abdominal wall was shaved to the pubes, thoroughly cleansed, first with soap and water, then with ether, and finally with a solution of bichloride of mercury, 1 to 1000. Towels soaked in the bichloride solution surrounded the seat of operation.

An incision was made in the abdominal wall, extending from an inch above the umbilicus downward to a length of 5½ inches, and rapidly carried down to the peritoneum. This membrane being incised to the same length as the abdominal wound revealed a uterus at full term, well and firmly contracted around its contents. The surface of the organ was seen to be covered with numerous tortuous veins. The uterine tissue seemed remarkably pale. A spot was selected at the upper portion of the body of the uterus and an opening sufficiently large to introduce a finger made with a scalpel and then rapidly extended to a length of 4 or 5 inches. The hand was immediately introduced into the organ and grasped the first presenting portion, which proved to be an arm; a foot was then grasped, the child turned and rapidly delivered. The child was asphyxiated and evidently suffering greatly from the prolonged compression to which it had been subjected; it was at once placed in the hands of Dr. Longaker, who after prolonged and skilful efforts succeeded in fully restoring it. Upon incising the uterus, and again after the delivery of the child, there was a gush of blood, but it did not seem to me greatly in excess of that of a normal labor. One fact remarked by all was the large amount of meconium in the uterine cavity—convincing evidence of the prolonged and ineffectual compression which the child had endured.

The placenta was attached a little to the left of the line of incision, and, almost immediately after the delivery of the child, appeared at the incision and was quickly delivered.

The uterus was now thoroughly freed from clots. Some difficulty was experienced in obtaining a complete and satisfactory contraction of the organ, but finally this was secured and the sutures were introduced.

The time occupied from the first incision to the introduction of the first stitch in the uterus was nine minutes. There were ten deep and about the same number of superficial Lembert stitches introduced.

After having secured the uterus from leakage the hand was passed into the abdominal cavity back of the uterus, and thence down into the pelvic cavity, to locate and, if possible, remove the growth which had caused the difficulty. The tumor was found to be a pedunculated fibroid, springing from the centre of the posterior surface of the body of the uterus by a short and thick pedicle, and occupying a position partly in the abdominal and partly in the pelvic cavities. Its position in the pelvic cavity was in the posterior (Douglas) cul-de-sac. It had pushed the vagina downward and forward and had compressed the rectum back toward the sacrum. All of the pelvic cavity was occupied by this growth save a space anteriorly of about 1 by 1½ inches. The growth had contracted firm adhesions in front to the uterus and vagina and posteriorly to the rectum. Laterally the adhesions were not so firm. Nevertheless it was immovable and fixed. It was deemed advisable to remove the growth, hence the adhesions were broken up with the finger, the tumor brought into the line of incision, the pedicle ligated, and the tumor removed. The bleeding from the torn adhesions was somewhat free, but not sufficiently so to demand ligatures. The abdominal and pelvic cavities were flushed with large quantities of hot water (which had been previously boiled) until the water returned uncolored. The cavities were then thoroughly sponged out until we felt assured there were no bleeding points left.

The abdominal wound was closed by eight or nine deep and four or five superficial stitches, a glass drainage-tube introduced into the pelvic cavity, the wound dressed in the usual antiseptic manner, and the patient put to bed and surrounded with hot bottles. The entire operation lasted one and one-half hours.

The patient's condition at the time of operation was far from satisfactory. Having suffered from irregular and ineffectual uterine contractions for sixty hours, she was worn out. The pulse was very rapid and weak. She took ether badly, requiring nearly half an hour for satisfactory anæsthetization.

Her condition otherwise was without incident until the uterus was incised; then there was sudden and alarming depression; the shock was so profound that she became pulseless at the wrist, and fears were entertained lest she might die before the operation was completed. However, upon the introduction of hot water into the peritoneal cavity, and the administration of digitalis and whiskey hypodermically, she rallied considerably. When she was placed in bed the pulse was still too rapid to count at wrist; the temperature under the tongue 94°.

The following is the record for the next ten hours: 10 P. M., pulse running, temperature 94°; 12 M., pulse running, temperature 94°; 5.30 A. M., pulse 150, temperature 95°; 7 A. M., pulse 150, temperature 98°.

For the first six or eight hours there was a profuse discharge of sero-sanguinolent fluid from the tube; the tube was cleansed and the fluid absorbed by means of antiseptic gauze every hour during this period. At the end of the first twenty-four hours there was very little staining of the gauze, hence the cleansing process was lengthened to every four or six hours. No nourishment or drink was given by the mouth, but to allay the burning thirst, and to promote recovery from shock, rectal injections of hot coffee were ordered every two hours. The vagina

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was kept well cleansed by injections of boric acid. There was very little lochial discharge.

The patient did not rally in a satisfactory manner. During the first twenty-four hours there was constant retching and nausea, though no vomiting. By the evening of the first day the belly had become slightly distended and tympanitic, temperature rose to 100°, pulse still remained about 150 or 160.

The second day ushered in still more tympany, increase of nausea, and some vomiting; a feeble running pulse, temperature ranging from 100° to 101°; and marked evidence of peritonitis. Drachm doses of magnesium sulphate every hour, champagne, and rectal injections of turpentine were ordered. The magnesium and champagne were rejected, and throughout the entire day there was constant nausea and vomiting with few intervals of rest. The tube remained sweet and the discharge practically *nil.* By the end of the second twenty-four hours the tympany had increased to an alarming extent, and a rectal tube was introduced high up in the bowel, but with no relief. She continued to sink, and died at 5 A. M. on the morning of the third day, fifty-five hours after operation.

Autopsy (eleven hours after death).—Belly greatly distended and tympanitic; tube free from discharge and without odor; the abdominal wound had united below, but failed to unite above. The intestines were greatly distended with gas, gushing into the abdominal wound when stitches were cut. Evidences of an extensive peritonitis present. The omentum was bound to uterus by bands of lymph. The surface of the intestines was covered with a thin layer of recent lymph which bound them to the uterus and abdominal wall in front. Bands of lymph also bound the uterus in front to the abdominal wall, and posteriorly to rectum. There were evidences of considerable pelvic inflammation at the site of the torn adhesions. The incision in the uterus appeared about three and a half inches in length; the uterine wound seemed tight and secure, but on cutting stitches it was found that no union had taken place. The *internal or mucous coat of uterus was in a sloughing condition* and covered with dark-gray secretion. In some places the mucous membrane was entirely denuded, showing the muscular coat.

The site of the pedicle was seen to be in the centre of the body of uterus posteriorly. Both ovaries were cystic. There was little or no fluid, either serous or purulent, in the pelvic cavity. The kidneys were congested, though otherwise healthy.

In reviewing this case there are many features worthy of consideration. I desire, however, to submit but a few for discussion.

There can be no question as to the necessity for the Cæsarean operation. Here was an immovable, fixed tumor filling up the pelvic cavity and diminishing its calibre to such a degree as to leave but one or one and a half inches of available space through which the child could pass.

Granting then the necessity for, and the wisdom of, our course, the first feature that suggests itself is: Did we err in deferring the operation to so late a period? Would the chances for success have been increased had we operated Friday night, twelve hours after the commencement of labor? It was stated in the notes of the case that after the uterus was incised it was found to contain a large quantity of meconium; again, at the autopsy, we found the uterine mucosa in a sloughing condition. The first condition noted is, except perhaps in breech presentations, indisputable evidence of the powerful contraction of the uterine muscle; the second condition is likewise evidence of the ill effects of these prolonged and ineffectual contractions.

In the series of cases tabulated by Harris[1] we find that nine women recovered. Of these, four were operated upon before the advent of labor; one just as labor had begun; two in ten and twelve hours respectively, and there are but two successful cases where the operation was deferred a longer period.

In the light of the autopsy and in the face of statistics of favorable cases, we are forced to but one conclusion, viz., that the chances of a favorable result would have been immeasurably increased by an earlier operation. To have the best possible conditions we should have known of the existence of the growth previous to the labor. This would have given ample time for preparation. The hurry and flurry of arrangements for the operation, with its consequent ill effects on the *morale* of the patient, would have been avoided. The condition of the uterus, as revealed at the autopsy, would not have occurred; and last, but by no means least, our patient would not have been worn out by the hours of suffering from ineffectual labor.

This case stands as an admirable example of the necessity for the examination, both vaginal and abdominal, of our obstetric cases previous to labor.

In justification of the delay of about forty-eight hours, which was the period of time from my first visit to the time of operation, I would call attention to the notes of the case, and candidly confess that I would be unable to do differently should a similar case occur. The character of the contractions deceived me. It was not apparent that labor was really in active progress for at least thirty-six hours after my first visit.

As to the diagnosis of the tumor, such I believe was absolutely impossible without the administration of an anæsthetic; and believing as I did, that the body felt was a portion of the child, there was no reason for such administration, as the child had not engaged, nor were the contractions or the condition of the patient at this time sufficient to warrant it. However, I am firmly convinced that where there is the least element of doubt in our diagnosis we should

[1] Harris: American Journal of the Medical Sciences, February, 1890, p. 118.

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use every means at our command to clear up this doubt, even to the administration of an anæsthetic.

The second proposition I have to offer is: Would a supra-vaginal hysterectomy (Porro operation) have given us a better chance for success?

The autopsy disclosed a uterine mucosa in a sloughing condition, which, in our opinion, had much to do with the fatal result. The operation spoken of would have effectually removed this source of infection. On the other hand, a Porro operation would have consumed much more time and added greatly to the condition of shock.

It is to be remembered that when the uterus was incised there was an alarming depression from which our patient rallied very slowly.

In our judgment a supra-vaginal hysterectomy would in no wise have averted the unfortunate result; on the contrary, it would have probably hastened it.

The third and last proposition: Was it an error of judgment to remove the growth in view of the exhausted condition of the patient?

After mapping out the position of the tumor, and being fully assured that the adhesions were not so extensive or firm that they could not be readily broken up with the finger, the temptation to remove it at this time was almost irresistible.

So far as the element of time is concerned, this could have had but little influence, for the removal of the growth occupied not more than five or ten minutes.

As regards the tearing of the adhesions and the subsequent inflammatory condition, the autopsy disclosed marked evidences of pelvic inflammation at the site of the torn adhesions. I am not convinced that the removal of the growth, and the resulting inflammatory condition, may not have added to the elements which brought about the fatal result.[1]

817 FRANKLIN STREET.

NOTE ON THE USE OF ESERINE IN ULCERS OF THE CORNEA.

BY G. E. DE SCHWEINITZ, M.D.,
OPHTHALMIC SURGEON TO THE PHILADELPHIA AND CHILDREN'S HOSPITALS.

IN THE MEDICAL NEWS of March 8, 1890, Dr. H. F. Hansell records the results of some clinical observations on the treatment of abscess and deep ulcers of the cornea, and concludes that eserine is superior to atropine. While far from willing to discontinue the use of atropine, my experience, in selected cases, especially in the wards of the Philadelphia Hospital, is in exact accord with that given by Dr. Hansell. In patients of generally feeble powers, especially if past middle life, and if the lesion is situated in the periphery of the cornea, eserine acts more favorably than atropine. Whether this action depends upon its property of lowering tension, provided the intraocular tension is increased at the time of its application, or upon its asserted power of checking the migration of white blood-corpuscles, or because it contracts the pupil, enlarges the surface of the iris, and dilates the ciliary arteries, has not been definitely settled. The clinical fact remains that it has the power of limiting the sloughing process, and in the opinion of Brudenell Carter is "the most potent medicinal agent for the fulfilment" of this indication, having "been the means of saving numbers of eyes which, without it, must have perished."

Hospital case, a male, aged fifty-five, in feeble general health. A ragged ulcer, with unhealthy edges, was situated at the upper and inner border of the cornea, marking the position of what previously had been an abscess with elevated surface. The treatment comprised atropine, boric acid solution, hot compresses, and tonics. The process was unchecked, and each day the appearance was more unfavorable. All remedies were discontinued and eserine solution substituted for them. The effect was almost immediate, and within ten days firm cicatrization had taken place. At no time was there photophobia. The patient had some brow pain.

This case is worthy of record because the cure may be ascribed entirely to the eserine. Other remedies had failed and this drug was employed to the exclusion of hot compresses and antiseptic lotions, the almost universal use of which, in the opinion of Mr. Nettleship, "renders it difficult to draw trustworthy conclusions as to the effect of eserine." If there is iritis, eserine, as a rule, is not advisable; but the mere presence of posterior synechiæ, the result of former inflammation of the iris, does not contraindicate the remedy.

Hospital patient, male, aged twenty-five, with irregular pupils, the result of iritic adhesions, presented himself on account of a large sloughing ulcer of the right cornea. The cause of the ulcer could not be ascertained (the patient spoke Russian only). The usual atropine treatment was not efficacious, while under the influence of eserine cure resulted. After cicatrization was complete, atropine locally, together with mercury and iodide of potassium, was ordered, with marked benefit to the old iritis. In this case, however, hot compresses and stimulation of the ulcer were also employed.

Dr. Hansell considers solutions of eserine stronger than two grains to the fluidounce inadvisable; Carter has suggested four grains to the ounce. My experience is limited to weaker solutions, one-fourth to one grain to the ounce; in this way one of the

[1] The child weighed at birth nine pounds full. At this day, the thirteenth from birth, it remains strong and vigorous. The uterine fibroid weighed two pounds.

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objectionable symptoms following the use of the drug—headache—is reduced to a minimum. Operative procedures, in the opinion of Dr. Hansell, should be limited to a division of the anterior surface of the abscess and evacuation of the pus. My own preference in open and sloughing ulcers is for the actual cautery. This may be used, if necessary, after division of the anterior surface of an abscess. I have employed this method in many cases and in various types of corneal ulcers with uniform success; in a number of instances of decided hypopyon-keratitis, complete absorption of the pus has followed a thorough application of the thermocautery. Dr. Hansell's protest against the common habit of prescribing cocaine in abscess of the cornea and other severe inflammations of this membrane, an injudicious method of practice ably condemned by the publication of Jackson, of this city, deserves emphasis.

MEDICAL EXPERT TESTIMONY AND ITS ADMISSIBILITY.

BY E. SPENCER MILLER,
OF THE PHILADELPHIA BAR.

THE profession is so frequently called upon to testify on medical subjects in courts of law, that it has become quite important for the physician to know what are the essentials of legal competency to speak as an expert witness.

One is constantly surprised to find that subjects of every-day familiarity are yet, in science, topics of hot discussion. The question as to what extent of experience entitles a man to be heard as a medical expert witness, appears to be one of these vexed subjects.

A case decided by the Supreme Court of Wisconsin upward of a year since, and officially reported a few months ago, brings up this question in a most striking way. A report of this case appeared in the *American Law Register* for August, 1889, together with a very full annotation—citing precedents throughout the country—by Robert G. Morrison, of Minneapolis, Minn.

A prisoner, already committed to the State prison to serve a life sentence under conviction of murder in the first degree committed by arsenical poisoning, was relieved of his term of imprisonment, and, by an extension of the legal principle which generally forbids a second trial in capital cases, was set at large to live out his days scot free, only because the jury upon whose verdict his sentence was pronounced had been allowed to hear the testimony of two doctors who in their practice had never had actual experience in cases of irritant poisoning.

John P. Soquet was put on trial in April, 1888, for the murder of his wife, which was committed fifteen years before. Prior to 1873 he had lived with his wife and their seven children upon a farm in Brown County, Wisconsin. August Mainsort and his wife lived a mile away. It seemed that criminal intimacy existed in June, 1873, between Soquet and Mainsort's wife. Soon Mainsort suddenly died. Soquet assumed direction of his burial, and showed much zeal in hastening the ceremony. Before burial an inquest showed a quantity of arsenic in the dead man's stomach. A few days later Soquet's wife died, and the survivors seized the auspicious moment to wed each other. The wife's death had occurred under circumstances casting very strong suspicion upon Soquet. The physician attending her had diagnosed the symptoms as those of corrosive poisoning, and then, apparently suspecting foul play, had withdrawn his services. In the course of the trial this physician was called to describe the occurrences and prove the cause of death. He was asked: "What are the symptoms of arsenical poisoning?" Before an answer was permitted he was questioned as to his knowledge and experience. It appeared that he had been for ten years a member of a medical society and had practised twenty-five or thirty years. No case of poisoning, however, had come before him. He had only studied that branch of practice in common with others. Against the protest of counsel for the accused, this doctor was then allowed to state the symptoms of arsenical poisoning. As specified by him they tallied closely with those observed in Soquet's wife. Upon further questions in cross-examination, the witness said he had never seen a death from irritant poisoning—knew the symptoms only from "theory," his "knowledge as a student of medicine," and from books—without practical observation. Another doctor, with still less general knowledge, and with no actual experience in cases of poisoning, was called in corroboration. Upon a description of the symptoms observed he diagnosed the case as indicating arsenical poisoning. Two other physicians, who had had actual experience in the treatment of arsenical poisoning, testified, and their statements were to the same effect.

The jury found Soquet guilty, and the court pronounced sentence of imprisonment for life. On appeal the Supreme Court reversed the decision. As above indicated, this action sent him back to liberty, and, we may infer, to the embraces of his blood-bought consort. The national constitution prohibits putting a person accused of murder to the jeopardy of trial more than once.

The reasoning of the Supreme Court in the course of its opinion goes very far, much further than was necessary to justify a reversal of the judgment.

Judge Orton, who delivered the opinion of the court, relied upon the reasoning and authority of a

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prior case (Boyle *vs.* State), wherein a somewhat different question was decided.

It was there held that a witness cannot testify to the published statements of an author upon a question of medical science.

After referring to the well-established doctrine that a medical book itself cannot be offered in evidence, he quotes from the opinion of the court in Boyle *vs.* State as follows: "Certainly, if the book itself cannot be read in evidence to the jury, the witness cannot be permitted to give extracts from it as evidence, depending upon his memory for their correctness," etc. Judge Orton then proceeds: "The testimony of such medical witnesses is at least hearsay—what medical books and teachers taught or told them, repeated from memory. The learned counsel for the State asks this court to review and overrule that case as not supported by authority." But it is supported by authority and equally by reason.

Perhaps it would have been wiser if the counsel for the prosecution had argued that the two cases were very different. The weight of authority is *with* Boyle *vs.* State, but *against* Soquet *vs.* State. That the decision in Soquet *vs.* State is in conflict with the current of decisions in this country and in England is very clearly shown by Mr. Morrison's notes. We propose to present the principles which thus appear to be established and the reasons for them.

At the foundation of the jury system lies the theory that the object to be sought is such a decision of the litigated question as the *judgment of the people at large would affirm.* This is the key-note of our whole structure of government. The Constitution of the nation and that of every State are the formulated will of the respective peoples. The subordinate law, too, whether written or unwritten, is the work of the people through the medium of legislative representatives or judges whom the people select. Hence no more appropriate body could be found to decide questions which arise in carrying into practical effect the laws thus sprung from the people, than one taken from and quite in accord with the great body of the people. The same theory, worked out to its logical conclusion, will harmonize and show the basis of almost every rule of evidence.

The assumption is, proceeding from the theory above stated, that the combined judgment upon all non-legal questions of a group of men—as great in size as may be, consistently with convenience and wieldy proportions—taken from the mass of the people by lot, and so, in some degree, representative of the whole body of citizens, will produce a result more likely to satisfy the public mind, and, indeed, more likely to be just, than the verdict of any other practicable tribunal.

Upon this view the system depends, in a large measure, for its justification, and practical test vindicates its theory. As long as this method of trial does not tend to gross miscarriage of justice, perhaps the object of securing the people's confidence in the issues of legal proceedings, is more important than that of attaining the greatest correctness in the matter of sifting testimony.

In general, the system requires that all evidence be confined to the narration of primary facts observed through the senses of the witness. His opinion upon matters as to which common judgment applies, cannot be received, because to accept it would be to forego in some degree the fruit of a popular decision. The object is to obtain the opinion of the *jury*, and if litigant parties may, at their will, present to the jury for their guidance the judgment of other persons, the benefits of the system are endangered.

In most cases before a jury, however, questions arise as to which popular knowledge is inadequate. It would, in such cases, be absurd to deny a jury all light save the mere narration of facts observed through the external senses. Where the issue is what percentage of metal a certain lode in a given ore-bed will yield; whether a specified plan of bridge structure, with members of a particular size, will bear burdens of a required weight; what is the value of a certain remote tract of wild lands; whether a peculiar observed state of the stomach and intestines indicates poisoning, and if so, what agent: in all such cases it would be extravagant to confine the testimony adduced to a mere narration of facts noted by external senses of the witness. No man would be satisfied with such data if the matter came up for consideration in his personal affairs, and therefore, when, in performance of a public duty, he deals with the interests and, perhaps, the life of another, a due solicitude requires that he should have further aid. If, then, this be the general view regarding such matters, the fundamental principle of the jury system requires that it should be applied in the trial of causes. Otherwise the jury's verdict could not represent what would be the popular judgment.

A few other exceptions exist to the rule that opinions are inadmissible, but it is unnecessary to refer to them at present.

The next question is: "How shall it be decided what matters thus call for expert opinions and what must fall under the general rule which rejects testimony in such a shape?" To find an answer we fall back upon the fundamental principle that the jury's verdict owes its value to the fact that it is supposed to be an exponent of that which would be the popular judgment. When any point arises, in a trial, which belongs to a plane of study or experience commonly recognized as quite above the general level of information, opinion-testimony upon that

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point is admissible. If a man of ordinary prudence would defer action upon such a question, were it to arise in his own affairs, until he had taken the opinion of one having special acquirements on the subject, then the jury may have the like aid. Some assistance is afforded in the application of this test by the fact that, in those subjects as to which deficiency of popular comprehension is generally recognized, the demand for advice or services from persons specially qualified is likely to give rise to a class of individuals trained to answer the demand. Hence, when the inquiry before a jury raises a question belonging to some sphere which is assigned to a thoroughly recognized vocation marked by the necessity of special training for it, then the opinion of a competent person upon that question is generally admissible. In this view the test of admissibility of opinion-evidence is sometimes stated to be that such testimony is competent only where the considerations appertaining to the point to be proved belong to the dominion of a recognized vocation exacting a particular learning or experience.

The remaining point to be considered is: What should be required—where a question calling for expert testimony has arisen—of a witness who is presented to give his opinion as evidence? What is an expert?

This is the point which came up in the case of Soquet *vs.* State.

What indication is to be drawn from the fundamental consideration which was stated? Following the reasoning heretofore used, the person offered must be one of so great proficiency that a prudent man, where his own affairs are involved, would be satisfied to accept such guidanee.

It might reasonably be said here: "Why not let the jury decide whose opinion they will hear?" "If the design be to arrive at what would be the popular judgment, by submitting the case to a body of men taken as representative of the people, will not the conclusion of that body upon the degree and character of proficiency in any science, needful to make a man's opinion worthy of credit, be the truest guide?" The same argument might be urged as to every other question regarding the admission of evidence. An answer is quite obvious. Were the popular judgment actually taken upon a question, the conclusion reached would be, in some measure, the result of guidance by a comparatively few individuals of peculiarly strong mental grasp and power of influence. The views of these persons would sway the minds of their weaker fellows. Owing to the necessary limitation in number of the jury panel, it must frequently happen that no such person is to be found in the jury. In no point would the influence of such persons be more needed than in deciding just such questions as those which we are now considering. Since they must, as has been said, be frequently lacking, the decision of these problems is assumed by the court. The degree of capacity needful to judge of the veracity of a witness, the probability or improbability of narrated facts, is very much below that competent to limit correctly the province of opinion-evidence. Moreover, it results necessarily from this same limitation of numbers, that the process of decision will not have that character of composition out of the elements of all individual and factional tendencies, which popular arbitration, applied under absolute conditions, would afford. It is further to be noticed that practical considerations, such as the necessity of limiting the time to be consumed by a litigant in the presentation of his case, claim attention. The patience of a jury might serve to hear very many witnesses whose competency is so slender as to give but little satisfaction. Economy requires that a litigant should present such a class of witnesses as will speedily afford a good weight of authority, and a judge who, unlike a jury which is empanelled for but a single case, is charged with responsibility for the prompt disposition of business throughout the entire term of court, is a better dependence for regulating matters of despatch.

We have thus reached a general understanding of the tests which rule the admission of expert testimony. Whenever a question of fact arises before a jury, involving considerations generally recognized as out of the sphere of common information, expert evidence is admissible to furnish light upon these considerations. Upon such questions, opinion-evidence may be received from any person whose acquirements are such as would satisfy the public in general to act upon his or her conclusions as to matters of personal importance to themselves.

A practical point may here be called to attention.

When the law attempts to discriminate between persons whose attainments in a certain direction constitute their capital and stock in trade, it stands upon delicate and difficult ground. This is especially so when the vocation is one of those often regarded as particularly elevated and dignified, which are known as the learned professions. Hence there is a very noticeable tendency in the decisions, to admit the testimony of persons generally where they are well recognized as belonging to any such peculiarly learned or skilled body—so long as that repute is not held by deception or artifice—without making a close inquiry into the extent and frequency of their experience or research.

Let the tests which have thus been arrived at be now applied to the case in point.

No question appears to have been raised whether the point involved in Soquet *vs.* State was one calling for expert evidence. Under the principles which have been stated, there was no room for doubt that such evidence was admissible. The

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only doubt was whether the two physicians who had never seen cases of irritant poisoning could properly be allowed to tell the jury what the symptoms of such a disorder are.

It can hardly be contended that the public in general give credit to only the results of personal experience by that physician from whose mouth they receive the opinion. Most persons would prefer a judgment formed from general familiarity with and comparison of those records of the experience had by other men whose intelligence and innumerable opportunities for observation made them famous, than that of a man whose information is only empirical. No doubt much immediate observation of like cases, by the practitioner whose advice may be received, is important, but—certainly upon such a point as the signs of any given poisoning agent—a general knowledge of the authorities would seem to be more essential. It must often be unsafe to rely upon observation of other cases. Individual peculiarities of the patient must often cause a variation of external indications. Observation of outward aspects may not deduce the essential features of that condition which is their cause, and so may give little aid to the practitioner. The books, on the other hand, will state both the probable range of variety in the symptoms, and the character of that radical disturbance of which the symptoms are exponents. Moreover, physicians who have not had actual personal experience in just that disorder whose symptoms they are called upon to describe, are not necessarily quite without such aid to their theory as comes from immediate observation. Experience in more or less different cases must throw side-lights which will afford much service. A multitude of analogies and similarities exist, which tend to make one line of experience furnish a valuable aid to quite different practice.

No doubt a father who seeks medical advice for his child in dangerous illness would much prefer to employ a physician who adds actual experience to book-study of the disease to be treated. But this is not the question. There is no rule of evidence which excludes a witness merely because a person *likely to enlist more confidence* can be found. It is enough that people in general would give weight to the views of such a one for guidance in matters of importance to themselves.

It would, therefore, seem that, in order to justify the view laid down at the beginning of this paper—that the established precedents are adverse to Soquet *vs.* State, it is unnecessary to draw into the reasoning that practical—somewhat illogical—point of the law's unwillingness to discriminate in point of competency between members of a learned profession.

The reasoning of the court, of which the chief part is above quoted, seems very far from persuasive. There are many reasons why a medical book should not be put in evidence by giving it to the jury to read or by reading it to them. There is danger of the author's meaning being misunderstood. No opportunity is furnished the adversary for ascertaining by cross-examination just how his language is to be taken. In almost every book, probably, passages are to be found which would seem to be contradictory of each other. Either one, if taken alone, would probably convey a misleading idea. Perhaps a perusal of the whole book will be necessary before some of the passages contained in it can be thoroughly understood. Hence it would be quite unsafe to allow an extract to be read to the jury.

No doubt it follows, as the court says, that the recollection of any person, whether physician or not, upon some extract from a certain specific author, would be inadmissible. It is quite another and unjustifiable thing to hold that the product, in a mind specially trained and cultivated in the subject, of a personal study including not only the book in question but the books of others upon the same or kindred subjects, is not admissible.

The deduction which we have attempted to make from very radical principles of law, leads, therefore, to these results:

I. Expert opinions are not admissible, except where the point in question is plainly out of the range of general information.

II. When matters of this sort arise in courts of law no person will be admitted so to give his opinion unless his training has been such as would lead the public in general to rely upon his judgment as to like matters.

III. The law does not judge of expert admissibility upon the basis of any specific opportunity or opportunities had by the witness for acquiring knowledge of the particular point arising. It will neither admit a person as an expert witness upon a mere showing of occasion in his experience for acquiring knowledge upon the particular point in question, nor will it exclude one who shows assuring general familiarity with the branch of knowledge concerned simply upon the ground that his experience has not included any case presenting the same facts as that before the court.

CLINICAL MEMORANDA.

OBSTETRICAL.

Face Presentation, complicated by a Spinal Tumor; Craniotomy.—The patient, aged twenty-six, was a primipara, small, but well developed, born in America. On November 3d, 6 A. M., I found her in labor. Upon examining her abdomen, I noticed a peculiar peaked or dome-shaped appearance in the hypogastric region. It felt hard and hemispherical, and conveyed the impression

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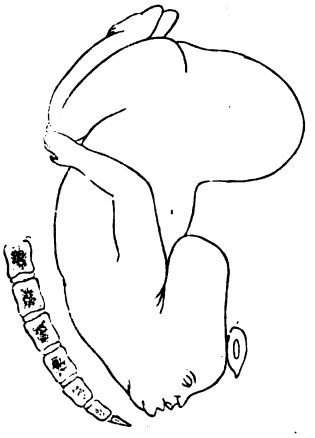
that it might be the fœtal head. The heart-sounds could be heard most distinctly below the umbilicus a little to the right of the median line. A twin pregnancy was suspected, but a second heart-sound could not be detected. The mother of the patient said that she had noticed this peculiar projection several months before. That I had to deal with a monstrosity or a spina bifida was to me the most plausible explanation. Upon examination the os was found to be dilated sufficiently to admit two fingers, revealing a full face presentation. In fact, the extension was so extreme that the forehead was pushed behind the symphysis pubis, and the chin pointed to the coccyx. (Fig. 1.)

FIG. 1.



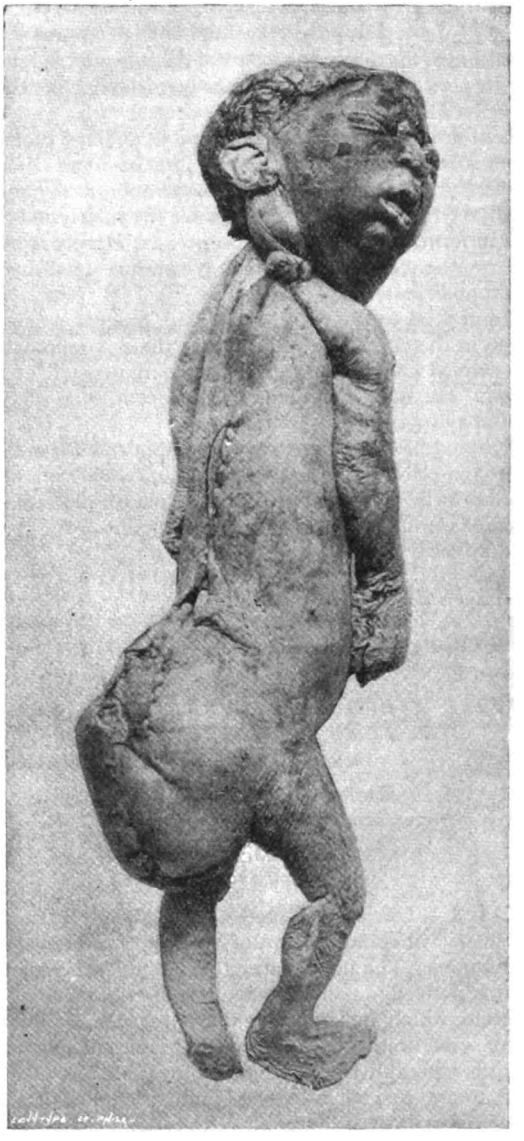
Various methods for reducing the extended head were resorted to, but without avail. Version was attempted, but likewise failed. The patient being now considerably exhausted, and the uterine forces flagging, the forceps were applied, and the forehead was forced from behind the symphysis pubis to bring the brow in position for craniotomy. Smellie's perforator was used, and great difficulty was experienced in preventing injury of the maternal parts, as they were much swollen from the pressure of the head and the prolonged manipulation. The head was delivered, and prompt expulsion of the child was looked for. With all the physical force which could be applied with safety to the mother, and without pulling the child to pieces, it could not be delivered. The arms were brought outside, but without any appreciable effect. Evisceration was next resorted to, but this did not diminish the bulk sufficiently to admit the hand or fingers for exploration. Dr. Joseph Price's crushing-forceps were applied to the pelvis of the child with telling effect. With the assistance of Drs. M. and J. Price, I worked for nearly four hours, when the child was finally delivered.

The combined force of the crushing and powerful traction burst the tumor into the abdominal cavity of the child, and thus the bulk was diminished. The skin covering the tumor was stripped off by the pubis.

It is a question in my mind whether Cæsarean section would not be a safer procedure in cases such as just described. At one time, when delivery seemed utterly hopeless, Cæsarean section was thought of, but, as her injuries were already so great, and her condition so bad, she could not have survived such a procedure. A large abscess formed in the vagina. Three weeks later she had recovered.

The child was a male, weighing about five pounds, poorly nourished, and with a club-foot. The sacro-lumbar region presented an oval, slightly lobulated tumor larger than a child's head. The tumor felt doughy to the touch, with here and there a fluctuating point. The skin was neither discolored nor adherent, except at a point over the middle of the growth, where there was a dimpled adherent point resembling the umbilicus. An incision in the median line through the skin, superficial fascia, and fibres of the gluteal muscles disclosed the much thickened coverings of the spinal cord.

FIG. 2.



About three ounces of a clear fluid, apparently cerebro-spinal, escaped from the sac. The defect in the spinal column consisted of the entire absence of the fourth and fifth lumbar vertebræ, sacrum, and coccyx. About one-fifth of the tumor extended into the abdominal cavity

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through the bony defect. The cord appeared normal above the seat of the growth.

The microscopical appearance, as described by Dr. Morris Booth Miller, was as follows: "Very small multinuclear cells, round, of uniform size, with no interstitial matter whatsoever. The general character of these cells approaches that of embryonal epithelium more than any other structure. There are no cells of a sarcomatous nature."

This case presents sources of perplexity hard to overcome. The only logical conclusion which can be drawn from the position of epithelioid cells within the meningeal coverings of the spinal cord is, that the source of these cells is the central canal of the spinal cord. Proliferation of the epithelial cells of the spinal canal is described by Ross in his *Diseases of the Nervous System*, under the head of Periependymal Myelitis or Syringo-myelitis. Speaking of the morbid anatomy of this affection, he says:

"In periependymal myelitis the epithelioid cells which form the lining membrane of the central canal, and the cells of the neuroglia which surround it, undergo proliferation, so that the central gray column becomes altered in structure. In some cases the tissue appears to consist chiefly of epithelioid cells which are irregularly polyhedral in form, and which may be pressed closely against one another, or separated by a variable quantity of amorphous material."

He goes on to say that this morbid process is usually found in the cervical cord, and that the enlargement of the central canal rarely exceeds the dimension of the finger. He does not mention the occurrence of congenital syringo-myelia.

It would be plausible to suppose that the absence of neuroglia cells in the case was due to the fact that the rapid growth of the epithelial cells outran that of the neuroglia proliferation, and that the remains of the spinal cord might be found along the sides of the tumor in thin layers.

JOHN S. MILLER, M.D.
PHILADELPHIA.

HOSPITAL NOTES.

DOUBLE HYDROCELE. CHRONIC ABSCESS OF THE FEMUR. RADICAL CURE OF INGUINAL HERNIA.

Abstract of a Clinical Lecture delivered at the Roosevelt Hospital, New York.

BY CHARLES McBURNEY, M.D.,
ATTENDING SURGEON.

CASE I.—This case is interesting both on account of the history and on account of the shape and tension of the tumors. The man states that about one year ago he first noticed an enlargement on the right side of the scrotum, which he is positive disappeared entirely after using some liniment. The swelling returned about four months ago, and since then the other side has swollen. One tumor has already been punctured, and its fluid contents removed, but at present the sac is again greatly distended with fluid. The tumors are translucent and perfectly irreducible, and it is fair to suppose that we have to deal with one of the ordinary forms of hydrocele, *i. e.*, of the tunica vaginalis. The shape is different from that of most hydroceles, the tumor passing well up into the canal, and being very tense and feeling solid at the lower portion. The constrictions which give these tumors their peculiar aspect are due to thickened sac wall at these points. It is probable we shall find that the testis lies within the sac in both cases. The operation which has been selected is known as Volkmann's operation, and consists in incising the sac and stitching the edge of the skin to the cut edge of the serous membrane so as to provide against primary union, and to obtain complete closure of the sac by adhesion from within. This operation was chosen in the present instance in preference to the methods by injection of iodine or carbolic acid, which are both excellent methods, because this patient is a working man and is anxious to be radically cured without danger of recurrence. It is probable that he will be cured in about two weeks.

A straight incision was made over the right sac through all the tissues, and as a precaution against wounding the testis the opening in the sac was first made at the upper part, so that the finger could be introduced and the exact position of the testis determined. The fluid in the sac was under such great pressure that it was forced out through the opening for a distance of one or two feet. The right tumor proved to be an ordinary hydrocele with the testis somewhat enlarged, and with one or two points of adhesion. The left sac was similarly treated, and the testis was found adherent to the anterior wall immediately in the line of the lower portion of the incision. Dr. McBurney remarked that if the precaution of opening the upper part of the sac first had not been taken, the testis would have been split open by the knife, an accident that he had once witnessed during the performance of this operation. This sac ran into the inguinal canal as far as the internal ring. Having completed the suturing of the serous membrane to the skin, the cavities were irrigated with Thiersch's boro-salicylic solution, drainage tubes introduced, and the wound dressed with powdered iodoform and a packing of iodoform gauze. Iodoform gauze compresses over this—protected from possible soiling by rubber tissue—were applied, and the whole secured by a spica bandage. The tube should be removed in three days, and after this the packing changed on alternate days.

CASE II.—The attention of the class was next invited to an interesting case of bone disease, which in its insidious development, and uniform enlargement of the whole of the affected bone, resembled quite closely certain cases of a very subacute form of osteomyelitis resulting in the formation of pus.

The patient, twenty one years old, stated that one year ago, after some exposure, he felt pain in the lower and inner side of the right thigh, which was unattended by chill, fever, or any special illness. He received hospital treatment consisting of various external applications for about three months, during which time no sinuses appeared. There had been only slight disability and he came to the hospital chiefly on account of a fluctuating swelling on the outer side of the thigh. The whole lower half of the thigh was found to be at least one-third larger than the other portion. There was a general enlargement of the lower half of the shaft of the femur, and, on the outer side, a fluctuating swelling

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which upon manipulation discharged, for the first time, a few drops of pus.

After applying a constrictor to the limb, the sinus was explored and found to lead to a sac of considerable size filled with tuberculous-looking granulations. The sac was laid open, and at its extreme lower end there was a minute opening passing directly backward against the shaft of the femur, a considerable distance from the superficial portion. A part of the bone was bare, and the probe passed directly into the shaft for some distance. This condition of affairs indicated a slowly forming bone abscess. A long, thin sequestrum was next removed. Leading from the first cavity was a sinus extending up to the anterior portion of the femur, although there has been no apparent suppuration in this part of the bone. The disease has extended into the epiphysis of the femur, and the fingers, reaching down close to the cartilage, still detected diseased tissue. There was also a cavity in the soft parts in the popliteal space communicating with bone, and filled with soft granulations. It extended within one-quarter of an inch of the surface on the inner aspect of the femur. This was also laid open. The limb was kept elevated while the Esmarch bandage was being removed. Two points bled freely, and as they were too close to the bone to be properly secured by ligatures, it was decided to leave the clamps *in situ* for two days. The wound was necessarily a very extensive one, and after packing it with iodoform gauze and putting on the usual antiseptic dressing, a wooden posterior splint with a footboard was applied.

CASE III.—A man, twenty-five years of age, was the subject of the next operation. He had had an inguinal hernia on the right side for five years. It had given him considerable pain and inconvenience and a truss was quite painful. The patient was in good condition; the hernial mass and ring were comparatively small so that the canal had not been much distended, the hernia coming half-way into the scrotum and emerging away from the external abdominal ring, and the hernia was easily reduced, so that the case is a favorable one.

Dr. McBurney said that he would perform his usual operation, which consists in cutting down on the sac, opening the canal, ligating the sac at the level of the internal abdominal ring, and afterward so treating the wound by sutures and packing as to keep it open during the whole process of healing, with the exception of the part occupied by the spermatic cord.

The pillars of the ring were readily exposed, and the anterior wall of the canal found to be very weak. In order to facilitate the handling of the sac, the canal was next opened, thereby exposing a small hydrocele of the cord, behind which was the hernia. The hydrocele was treated by splitting it open completely. The next step was to separate the cord from the sac, which is always comparatively easy in the canal, but sometimes exceedingly difficult lower down. Dr. McBurney said that the success of this operation depended entirely upon the absolute and complete removal of the entire sac, and he had no faith in any operation that did not contemplate this. The sac was separated from the cord up to the internal abdominal ring, and until it was possible to apply a ligature on a level with the peritoneum. The sac was next opened, a portion of omentum ligated, and the stump returned to the abdominal cavity. In applying a ligature to the stump, it is not applied very tightly—only enough to stop the bleeding, and not enough to injure the soft vessels and give rise to secondary hæmorrhage. After the stump was reduced the sac was pulled down so as to "take up the slack" in the peritoneum, and while held vertically, the operator's finger was introduced into the sac to make sure that there was no intestine within. While the finger was still in this position, the assistant tightened the ligature at the highest possible point. The sac when cut away was almost as thin as a cobweb, and, therefore, useless as a pad or plug to prevent the return of the hernia. Several stout sutures were then introduced so as to bind together the tissues forming the upper wall of the wound, and a similar series of stitches held together the tissues forming the lower wall. As each stitch was tied, the skin was deeply inverted. This mode of suturing secures healing by granulation from the very bottom of the wound, but as this arrangement makes the wound unnecessarily wide, two or three tension sutures with Lister's lead plates were introduced. These greatly diminished the width of the wound. The usual antiseptic dressing and a spica bandage completed the operation.

MEDICAL PROGRESS.

Salolized Collodion for Rheumatic Joints.—The following prescription, to be used as an external application in acute rheumatism, is quoted by the *London Medical Recorder:*

℞.—Salol, Ether, } of each . . . 4 parts.
Collodion . . . . 30 " —M.

Test for Exalgin.—According to the *American Journal of Pharmacy*, exalgin may be distinguished from acetanilid and phenacetin by the following simple test: 1 grain is dissolved in 2 cc. of chloroform and 20 cc. of petroleum ether added. If the exalgin is unadulterated the solution will remain clear. Moreover, phenacetin requires 20 cc. of chloroform and acetanilid 6 cc. for solution.

Prescription for Rickets.—KASSOWITZ prescribes the following mixture to children suffering from rachitis:

℞.—Phosphorus . . . . ⅙ grain.
Lipanin . . . . 7½ drachms.
White sugar, Acacia, } of each . 3½ "
Distilled water . . . 1¼ ounces.—M.

One teaspoonful three times daily.—*Der Kinder-Artz*, January, 1890.

Herpes Menstrualis.—Contrary to many writers, BERGH (*Monatshefte f. praktische Dermatologie*) believes herpes genitalis to be as frequent in woman as in man, his opinion being based upon the observation of 877 prostitutes in Copenhagen. Among these patients he noted 644 cases of herpes occurring about the menstrual period. With some women herpes was an invariable accompaniment of menstruation; with others it only occasionally appeared. The cause, he believes, is a disturbance of in-

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nervation. The most usual seat was on the labia majora and adjacent parts; in five the uterus was involved. In a few the eruption appeared not only on the genitals, but on the face. The author does not believe that herpes appears only in those who have suffered from venereal diseases, as he has seen it in women without a venereal history.—*Centralblatt für die medicinischen Wissenschaften*, February 22, 1890.

Treatment of Post-partum Hæmorrhage.—DR. DIRSKA, in the *Berliner klinische Wochenschrift*, February 24, 1890, describes a method of treating post-partum hæmorrhage which he has practised successfully on more than thirty cases, excluding patients who, when first seen, were *in articulo mortis*. After the uterus is thoroughly emptied, it is grasped through the abdomen, and with the other hand two or three pieces of clean and transparent ice the size of a walnut are carried into the uterus and upper part of the vagina, where they are allowed to remain a few minutes. The external compression of the uterus is continued for fifteen minutes. According to the author, the bleeding stops immediately and permanently. The previous complete emptying of the uterus he considers of great importance, as clots will prevent thorough contraction.

Dirska has never seen bad symptoms follow this treatment, but he insists on the importance of using as pure and germ-free ice as is obtainable; moreover, he suggests that in hospitals ice might be artificially made for the purpose from sterilized water. After using ordinary ice the risks of septic infection can be reduced by intra-uterine injections of an ice-cold antiseptic solution. Cold fluids, however, cannot be used in place of the ice, as the latter acts not only through its temperature, but by virtue of the fact that it is a foreign body.

Administration of Quinine in Malaria.—According to M. JACCOUD, there is a great and important difference between the apparent and the real onset of an attack of intermittent fever. The real onset begins several hours before the chill, and consists in an increase of the urea in the urine. Chronologically speaking, then, the first phenomenon in intermittent fever is not the chill, nor the elevation of temperature, but the greater or less increase of urea in the urine. This increase takes place at different times in the various forms of malarial fever. In the tertian it is six or eight hours earlier than the chill; in the quartan type it may be twelve, fifteen, or eighteen hours earlier. Thus the proper time for administering quinine is fixed by the nature of the disease, its action being felt six hours after the remedy has been given. It will be perceived that in the quotidian type of intermittent fever a dose of quinine given six hours before the chill has not time to modify it, because the real onset occurs two hours before this outward manifestation—the chill—and, therefore, to be effective, the drug must be given eight hours before this is expected. In tertian fevers the proper time for giving quinine is twelve hours before the chill, and in quartan fever it is eighteen hours. Large single doses are most effective, because the drug is rapidly eliminated by the urine. Small and repeated doses never produce the action of the whole amount prescribed. When any gastric disturbances make small doses necessary, the whole dose should be given in such fashion that it is disposed of in one hour or less.—*New York Medical Journal*, March 15, 1890.

Medical Treatment of Dysmenorrhœa.—DR. E. W. MITCHELL writes as follows upon the medical treatment of dysmenorrhœa:

Remedial measures naturally divide themselves into those of relief and those of cure. Of the former, opiates occupy the first place in their power to relieve and in their power for ultimate evil; but once used, the danger of the opium-habit is great. The bromides, chloral, tincture of cannabis indica, hyoscyamus, belladonna, are all valuable. In plethoric women with scanty flow he has often found the bromides, combined with belladonna or hyoscyamus, promptly effective in affording relief. Sometimes the pain may be arrested by beginning their administration a day or two preceding the flow. Cannabis indica is useful in certain spasmodic cases and in cases with a free flow.

Antipyrine is a valuable addition to our means of allaying pain, and will give temporary relief in a large majority of cases, whatever the diseased condition; but the author has not been able to observe any curative effect. Caution should be exercised in its administration, since in too large doses dangerous symptoms may arise, especially in anæmic women. Dr. Palmer speaks highly of concentrated tincture of cimicifuga and of tincture of pulsatilla. Dr. Mundé also recommends pulsatilla in the neuralgic form. The physician may very wisely give his patients (and especially the anxious mothers) a warning against overdosing and oversoaking. Rest in bed, the application of dry or moist heat, an occasional hot sitz bath, the moderate drinking of hot fluids, are domestic measures which will afford a certain amount of relief. The dosing with gin or whiskey, with tansy tea, etc., should be discouraged. With cannabis indica in cases in which the flow is free; belladonna or hyoscyamus in spasmodic cases; antipyrine, possibly oxalate of cerium, pulsatilla, etc., we have a list of remedies for relief which are safe and usually effective for the time.

Bromides in congestive cases, used occasionally or for short periods of time, may be valuable, but their prolonged administration disorders the stomach and favors anæmia. Chloral should be used with circumspection on account of the liability to the establishment of the chloral habit.—*American Journal of Obstetrics*, March, 1890.

Treatment of Morphinism.—In a valuable paper upon morphinism (*Dublin Journal of Medical Science*, December, 1889), DR. ARTHUR WYNNE FOOT writes that it is easier to cure a morphine-eater of his craving than a morphine-injector. The probability of a cure may be estimated by attending to the following points: (1) The *duration* of the habit. Cases of short existence are more successfully treated than those in which the habit, of long standing, has exercised a deleterious influence on mind and body. (2) The persistence or not of the *condition which gave rise* to the exhibition of the drug. If this condition be irremovable, a cure is scarcely to be expected. (3) The physical and nervous *constitution* of the patient. Bad effects follow the withdrawal of morphine in cases of weakly individuals, or in those of specially nervous temperament. The magnitude of the

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dose does not much affect the prognosis, except in so far as the larger doses indicate chronicity of the habit. It is a hopeful consideration that, in most cases, to break the habit means to get well, because, unlike alcoholism, the morphine-habit does not entail structural lesions of any vital organ. Relapses, however, are very frequent, being more common in men than in women. So great is the tendency to relapse that Jäckel does not consider a cure to be accomplished by the mere suppression of the morphine-hunger, but considers the continuance of control over the patient in a proper institution of the greatest importance. Dr. Wynne Foot's practical remarks on the treatment of morphinism may be summarized as follows: The process of cure requires a degree of moral and physical courage seldom at the disposal of a morphine *habitué*. His abject mental state calls for firmness, gentleness, and tact on the part of the physician and the attendants. Neither the intensity of his craving nor the reality of his sufferings should be underrated or disputed. Four methods of treatment have been tried: (1) the *deceptive* plan; (2) the *substitution* plan; (3) the *tapering-off* plan; (4) the *abrupt withdrawal* plan. The deceptive and the substitution plans are not worthy of serious consideration in the management of confirmed morphinism; the latter simply handing the sufferer over from one enemy to another. Not only is the substitution of cocaine for morphine dangerous, but there is a risk of developing a cocaine-habit which is worse than morphinism. As to the tapering-off plan and the abrupt withdrawal plan, there seems to be no unanimity of opinion as to which mode of treatment should be employed. The first-named plan consists in the gradual reduction of the dose, until none of the drug is required. Dr. B. W. Richardson considers it better to reduce the dose at each administration than merely to lessen the number of injections in the twenty-four hours. The abrupt discontinuance of the drug is attended in all cases by indescribable sufferings, and in many by serious dangers. When morphine is suddenly cut off in those accustomed to its use a remarkable group of severe and alarming symptoms ensue, called the *Abstinenz-symptome* or reactionary effects. These comprise acute diarrhœa, insomnia, great excitement, amounting at times to mania dangerous to those around, and particularly to the physician; hallucinations, and collapse. Great care is needed in the case of pregnant women addicted to opium, because incautious attempts to withdraw the habitual drug are, according to some authorities, almost certain to be followed by premature labor.—*Practitioner*, February, 1890.

Treatment of Sycosis.—BROOKE considers that sycosis is always a contagious disease, and that there is no non-parasitic sycosis (*British Journal of Dermatology*). Sycosis, like true barber's itch, affects, almost exclusively, those who frequent the lower class barber-shops. Three or four days after being shaved, the patient notices a localized redness, followed by the formation of small points of pus, the commonest seat being just below the lower lip. The treatment Brooke recommends is, should there be much inflammation or eczema, the application of a lukewarm poultice of an antiseptic starch paste (made from starch powder 1 ounce, boric acid 30 grains), to be changed three times daily. This helps to soothe the inflammatory condition, to clean the skin from crusts and scabs, and to soften and empty the pustules. As soon as possible, epilation and shaving must be begun. The ointment which he finds generally effectual is composed as follows:

℞.—Oleate of mercury (2 per cent.) 1 ounce.
Ichthyol . . . . . 20 minims.
Salicylic acid . . . . . 10 grains.
Oil of lavender . . . . 2 drops.—Mix.

This should be kept applied on strips of lint or linen. It is by no means absolutely necessary to shave frequently, but the stubbly condition of the hair produced by infrequent shaving seems the most irritating to the follicles and most provocative of relapses. Hence the full growth of the hair is the next best alternative to regular daily shaving. External influences have not infrequently a distinct modifying effect on the disease; thus the sudden advent of cold wet weather, to which the patient may have been exposed, and internal causes, such as dyspepsia, nervous depression, anæmia, and struma, are apparently answerable, in some cases, for sudden relapses or very prolonged duration.—*Edinburgh Medical Journal*, March, 1890.

The Prevention of Urethral Fever.—DR. C. G. BUCHANAN KLOPHEL contributes a valuable paper on urethral fever to the *Therapeutic Gazette*, March 15, 1890, and in the prophylaxis of the disease lays stress upon the following points:

1. In operations for the relief and cure of chronic retention of urine, the complete evacuation of the urine at first should not be permitted, but rather the withdrawal of only a few ounces, and the immediate injection of a solution of boric acid or other mild antiseptic, in volume equal to one-half the quantity of urine withdrawn, lessening with each succeeding injection the quantity of fluid thrown in, and increasing the amount of urine withdrawn. As a result, we have less shock, if, indeed, any; no suppression of urine; no hæmorrhage from the urinary organs; and slight, if any, so-called urine fever.

2. Tight strictures of the membranous urethra are more successfully, and hence more safely, dealt with by perineal section. When associated with strictures of the pendulous urethra, the combination of internal and external urethrotomy is undoubtedly the best treatment.

3. The decomposition of blood, urine, and other organic matter in the bladder or urethra, may give rise to the phenomena of urethral fever through the production of ptomaines; hence the necessity for antiseptic treatment, generally and locally.

4. The disease is more common among those who are predisposed to it by a peculiar nervous temperament.

5. In view of the fact that more or less shock attends all urethral operations, especially the forcible and rapid dilatation of old strictures with sounds; and as sudden death has followed even the gentle insertion of a sound, the calibre of which was less than that of the stricture, it is hence important that all practicable antiseptic precautions should be observed in every case of dilatation of a urethral stricture or strictures, with a view to avoiding, so far as possible, such effects, which are more likely to follow the rapid dilatation of old strictures when not preceded by internal urethrotomy.

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6. It is also important to ascertain the condition of the bladder, urine, and kidneys before operating for stricture of any degree, and when these two organs are found extensively diseased, the greatest skill, gentleness, and patience are necessarily called for in the treatment of strictures. Further, when these organs are diseased, and we have to deal, in a given case, with several strictures of very small calibre of the pendulous urethra, two courses compatible with safety are presented, viz.: gradual dilatation alone, or internal and external urethrotomy, leaving a few days between the internal and external operation, the latter being done first.

7. Quinine, in any quantity, exerts no manifest influence over the course of urethral fever.

8. Boric acid, internally, by its resolvent and antiseptic action, doubtless does exert a favorable influence upon the disease, and will prove a prophylactic if given some days before operating.

9. With a further view to prophylaxis, both before and after all operations upon the urethra—even simple catheterism—the canal should be injected with some mild antiseptic. This is more essential after each act of micturition subsequent to internal urethrotomy.

10. When urine fever persists despite all treatment, or should it, after any operative interference with the urethra, jeopardize the patient's life, perineal section should certainly be done.

Treatment of Delirium Tremens.—In discussing the treatment of delirium tremens (*Journal of Nervous and Mental Diseases*, March, 1890), DR. E. P. HURD says that in most cases alcohol should be withdrawn at once, though in a few the gradual "tapering-off" method is preferable. Again, there are other patients in whom symptoms of cardiac weakness make the stimulation of alcohol necessary. Sleep is undoubtedly the great restorative, and, to procure this, recourse must be had to the hypnotics, of which the author prefers chloral. In some cases he combines ½ grain of morphine with 20 grains of chloral. Capsicum is also a useful drug, stimulating, as it does, the gastric branches of the vagi, and indirectly the nerve-centres. Dr. Kinnear, of England, at one time gave 20-grain boluses of powdered capsicum, the patient falling into a quiet sleep within an hour after taking the dose.

Lately a new treatment of delirium tremens by large doses of strychnine has been recommended. To Laton, of Rheims, we are indebted for this therapeutic novelty. Laton advised doses of 5 milligrammes ($\frac{1}{12}$ grain) by hypodermic injection or by mouth; these doses to be repeated two or three times a day. Dujardin-Beaumetz has repeated the hospital experiments of Laton with uniformly good success. By experiments on animals, Beaumetz has found "that there exists within certain limits a real antagonism between the action of alcohol and strychnine." Drs. Journet and Bounard also report favorable results from a series of trials in private practice of this remedy in delirium tremens, and in a number of the *Bulletin Générale de Thérapeutique* for 1888 appears an article by a Brazilian physician, Ramos, "On the Employment of Strychnine in Delirium Tremens," in which he extols the effects of this remedy. He declares strychnine superior to all other remedies, morphine, chloral, paraldehyde, etc., in controlling the disordered manifestations of alcoholism. Ramos would give large doses, hypodermic injections of $\frac{1}{12}$ grain, repeated every four or five hours, till the insomnia, agitation, and delirium are mitigated or disappear. In some cases, he does not hesitate to give as much as 1 grain in the twenty-four hours.

Mixture for Epilepsy.—According to the *American Druggist*, BROWN-SÉQUARD'S mixture for epilepsy is composed as follows:

℞.—Sodium bromide, Potassium bromide, Ammonium bromide	of each	180 grains.
Potassium iodide, Ammonium iodide	of each	90 "
Ammonium carbonate		60 "
Tincture of calumba		1½ fl. ounces.
Water, sufficient to make		8 " "

Prescription for the Fever of Phthisis.—The *Revue de Thérapeutique* quotes the following prescription, which is said to be used by LIEBERMEISTER in the hectic fever of phthisis:

℞.—Sulphate of quinine	30 grains.
Pulverized digitalis	7½ "
Extract of gentian—sufficient quantity.	

Mix, and divide into forty pills, of which from six to ten may be taken daily.

Prescription for Acne.—The following is quoted in the *Centralblatt für die Gesammte Therapie*, March, 1890:

℞.—Salicylic acid, Sodium borate	of each	52 grains.
Boric acid		40 "
Alcohol, Glycerin	of each	1½ ounces.
Oil of bergamot		5 drops.

To be used as a wash three times daily.

Prescription for Eczema.—According to the *Centralblatt für die Gesammte Therapie*, SAALFELD uses the following ointment in cases of pustular eczema:

℞.—Potassium carbonate		15 grains.
Salol		75 "
Olive oil		150 minims.
Sulphur		1½ drachms.
Zinc oxide, Starch	of each	3½ "
Lanolin, sufficient to make		6 ounces.—M.

Removal of Warts by Electrolysis.—DR. PATRZEK, of Oppeln, describes, in the *Deutsche medicinische Zeitung*, his method for removing warts by electricity. The wart is first thoroughly moistened with a warm solution of salt. Both needles are then thrust through it just above the surface of the skin, and the current turned on, one element after another being added until pain is felt. Five cells are sufficient. With most cases two sittings of five minutes each are sufficient to destroy the growth, which gradually dries up and falls away, leaving a surface at first slightly reddened, but which later assumes the appearance of normal skin.—*Weekly Medical Review*, March 15, 1890.

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THE MEDICAL NEWS.

A WEEKLY JOURNAL
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SATURDAY, MARCH 29, 1890.

ARSENIC AND BICHLORIDE OF MERCURY IN THE TREATMENT OF ANÆMIA.

ALTHOUGH it is perfectly true that we have almost no knowledge of the manner in which alteratives act in instances of disease where, through morbid functional activity, enlarged glands or growths appear, it is evident that they must act upon the trophic nerves or directly upon the nourishment of the affected parts. If they are used in large quantities they act as depressants to the normal nutrition of the body, producing primarily a decrease in the vitality of morbid growths, so that they melt down and disappear, and they may finally so reduce the condition of the healthy tissues as to cause sloughs and ulcerations. Whether these changes are due to the over-stimulation of nutrition—that is, to an excessive trophic change—or whether they depend upon actual lowering of the tone of the parts, we know not. One thing we do know, however, and that is, that small doses of most of the so called alterative drugs act as very distinct stimulants to the development of normal structures, and in no instance do we find this more typically represented than the effect which they exert on the blood. Quite a number of years ago Keyes, of New York, emphasized the value of minute doses of mercury bichloride in syphilitic and other anæmias, and abundant clinical observation has certainly confirmed his views. The dose of bichloride of mercury in anæmia should be about one-fortieth of a grain. Not only will minute doses of the bichloride of mercury act in this way, but small amounts of calomel or mercury itself will have such an effect.

Inunctions of very small amounts of mercurial ointment, once a day, or every other day, in adults and children, will increase the fulness and redness of the cheeks and lips, and the number of the corpuscles; the piece of ointment used being no larger than the half of a very small pea. This treatment will be found of service in cases not dependent upon specific taint or scrofula. The marked increase in the nutrition of children of a syphilitic taint, who are suffering from marasmus, under the use of gray powder and inunctions, gives further evidence of this fact.

Arsenic also is of value in anæmic conditions, and may be employed in comparatively larger doses than mercury; but, nevertheless, smaller amounts than are usually given in chorea and similar states. Osler has shown the value of the drug in anæmia, and so has Barton, of University College, in England. Any one of the preparations may be employed, but not more than one-sixtieth of a grain of arsenious acid should be taken in a day, although more has been used with no less benefit to the patient. Most of the drug under these circumstances is in excess and is cast off in the urine and fæces unused and wasted, and strains and irritates the emunctories of the body during its passage through them.

TREATMENT OF DYSENTERY BY ENEMATA OF CORROSIVE SUBLIMATE, ETC.

IT is now generally recognized that certain morbid conditions of the intestinal tract may be favorably modified by various drugs belonging to the class of antiseptics, among which the chief are calomel, bismuth, naphthalin, and thymol. It is a noteworthy fact that these substances are all insoluble, and it is in virtue of this property that they are enabled to run the gauntlet of the absorbents and exert their specific action upon the intestinal contents. The best of all antiseptics—corrosive sublimate—has thus far been of little use for the purpose mentioned, because it was supposed that no benefit could be exerted by any but a lethal dose. While this may be true of its administration *per os*, it is shown by G. LEMOINE (*Bulletin général de Thérapeutique*, January, 1890) to be a mistake so far as concerns administration *per rectum*.

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Lemoine has treated fifty-four cases of dysentery by enemata of corrosive sublimate and with the happiest results. The strength of the solution was one to five thousand, of which, two hundred grammes were at first administered three times a day; later, two hundred grammes of a solution of one to three thousand were injected twice daily. Improvement showed itself, as a rule, after the first injection, the first symptoms to disappear being the tormina and tenesmus. In a certain number of cases the tenesmus was so great that the enema could not be administered without a preliminary treatment, which consisted in painting the sphincter with a five per cent. solution of cocaine.

In the acute cases, a cure resulted from this treatment in from three to four days; whereas, in the more chronic cases which presented themselves for treatment on account of an acute exacerbation, a cure was effected, as a rule, in one day. The latter statement is somewhat startling in view of the well-known fact that chronic dysentery is decidedly rebellious to all the usual modes of treatment.

In no case was there any sign of systemic poisoning. It is probable, Lemoine believes, that the mercury is not absorbed when thus employed in dysentery. In five cases he tested the urine for mercury, and in every instance with negative results. This fact seems to stand in marked contradiction with the well-known absorbent power of the large intestine, and is probably due to the intensity of the inflammation of which it was the seat.

Lemoine's cases were all treated in Algiers, and many of them were of a severe type. In view of the infectious character of dysentery, the treatment is eminently rational, and the demonstration that our most powerful germicide can be used with impunity as an intestinal antiseptic is of decided value. At the same time, in view of the accidents that have followed the employment of resorcin in lavage of the stomach, we would recommend the greatest caution in the use *per enema* of the more poisonous corrosive sublimate.

REVIEWS.

OUTLINES OF THE HISTORY OF MEDICINE AND THE MEDICAL PROFESSION. By JOH. HERMANN BAAS, M.D. TRANSLATED, AND IN CONJUNCTION WITH THE AUTHOR REVISED AND ENLARGED. By H. E. HANDERSON, A.M., M.D. New York: J. H. Vail & Co., 1889.

THIS is one of the most valuable books which has appeared for a number of years, representing a class of medical literature of a standard equal to Hirsch's well-known book on *Geographical Pathology*. At the present time students, in graduating from medical colleges, leave with the idea that everything in medicine has been acquired within the last fifty years, and that everything which occurred before that period is absolutely useless in their daily life. In reality, a little knowledge of what our ancestors have done before us when defending themselves against disease would often save much useless repetition, and on certain occasions a large amount of chagrin, when a remedy brought forward as new is proved by wiser heads to have been used hundreds of years before. One of the best instances of such a state of affairs is represented by Bergeon's treatment of phthisis, which depended entirely for any therapeutic effect which it might possess upon the sulphur which it contained. Hundreds of years ago it was discovered by the medical men of the period that the influence of sulphur was exceedingly useful when applied to certain diseases affecting the mucous membranes, yet it remained for Bergeon to bring forward as a new idea the rectal injection of this remedy in the disease known as tuberculosis of the lung. A little knowledge at the time Bergeon first brought this method to notice would have saved a vast amount of experimentation and a still greater amount of expense to those who in their desire to aid in a discovery hastened to buy the necessary apparatus.

It is impossible for us in this brief review to do more than call attention to the great thoroughness with which the author and translator have carried out their work. No point has been left uncovered, and yet the book is so arranged that it can either be used as a work of reference or be enjoyed as interesting reading.

The American publishers have thought best to leave out a large number of the references which the German author placed in the original book, and this cannot but be regretted as an unfortunate decision. At the same time we readily recognize the fact that these additions would have very materially increased the cost and consequently the price of the work, and might have placed it far beyond the reach of many of those who might desire to possess it.

In conclusion, we wish to urge upon the profession in general the necessity for obtaining some such work and of glancing over its pages before attempting to foist upon their unsuspecting brethren a remedy which in reality may be as startlingly old as they believe it to be novel.

A TEXT-BOOK OF OBSTETRICS, INCLUDING THE PATHOLOGY AND THERAPEUTICS OF THE PUERPERAL STATE: DESIGNED FOR PRACTITIONERS AND STUDENTS OF MEDICINE. By F. WINCKEL, M.D. TRANSLATED FROM THE FIRST GERMAN EDITION WITH THE PERMISSION OF THE AUTHOR. By J. CLIFTON EDGAR, M.D. Ninety illustrations. Philadelphia: P. Blakiston, Son & Co., 1890.

NOTWITHSTANDING the fact that American obstetricians have not been at all backward in providing students and their professional brethren with text-books upon midwifery, it is perhaps well that some of the prominent teachers of the United States in studying foreign authors have concluded to place before Americans the views which they find so useful in their utterances to their students.

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There can be little doubt that the differences which exist in the methods of treatment in different portions of the world depend upon two great causes. The first of these is the geographical position of the persons among whom the author practises his profession, and the other is the mental tendencies which are peculiar to certain races. For this reason it is very frequently useful to place German, French, English, and American ideas side by side, and by a process of mental boiling down to separate the good grain from the practice of each nation, with a result which surpasses in every detail the methods of any one country.

It is useless for us to attempt to criticise a work of which Professor Winckel is the author. His practical experience and laborious researches in the literature of the subject have qualified him to place before the profession a book which is certainly of great value, and we desire to compliment Dr. Edgar upon his foresight and admirable work in the preparation of the American translation. One of the useful things about the work is that bibliographies accompany the articles upon each special subject, while the illustrations seem to us to be almost entirely original, which is but natural when we consider the enormous amount of material from which the author may obtain figures. The work of the American publisher has been well carried out, as is usual under these circumstances, and we venture to say the translation is put before the profession of this country in much better form than the German publishers placed the original before the physicians of the Fatherland.

SOCIETY PROCEEDINGS.

NEW YORK COUNTY MEDICAL SOCIETY.

Stated Meeting, February 24, 1890.

EYE-STRAIN, AND AN EASY METHOD FOR ITS DETECTION.

DR. FRANCIS VALK believes that the peripheral irritation caused by eye strain, either when the extrinsic or intrinsic muscles are involved, tends to cause various nervous phenomena, and may even be the exciting cause of the manifestations of functional chorea and epilepsy. He called attention to a recent monograph by Dr. J. H. Woodward, of Vermont, in which it is stated that out of one hundred and fifty cases of headache, vertigo, lachrymation, nausea, epileptiform convulsions, migraine, neuralgia, and similar troubles, at least eighty-five per cent. were relieved by the use of suitable glasses; sixteen per cent. were not benefited; while in the remaining cases either the patients refused to follow advice or the results were unknown. All of these cases had refractive errors, which, Dr. Valk said, could have been recognized by the method which he advocated in his paper.

The author showed that hyperopia was the most serious refractive error giving rise to eye-strain, because perfect vision was only possible by the continued action of nervous impulses which control the ciliary muscles. In the opposite condition, or myopia, there may be no eye-strain, except under special circumstances, such as the use of too powerful glasses. In the astigmatic eye, in order to counteract the effect of the unequal curvature, there must be unequal contraction of the ciliary muscle in the different meridians, with consequent strain and irritation.

When the intrinsic muscles of the eye are affected, the subjective symptoms which may be present are: headache, usually frontal and about the eyes; pain in the eyeballs, and a feeling of strain after reading; burning, lachrymation, floating specks before the eyes, slight stickiness of the eyelids in the morning, dizziness and vertigo.

When the extrinsic muscles are the seat of the difficulty, there will usually be occipital headache, or pain referred to the back of the neck.

During the last two years or more, the author has made frequent use of the simple and important diagnostic test known as "retinoscopy." In this method, as he practised it, the observer does not watch the movements of any shadow, but simply the movements of the illuminated portion of the retina across the pupillary space. If the pupils be widely dilated, it may also be noticed that the refraction at the periphery of the cornea is different from that in the centre, giving rise to two apparent shadows. If these appear to move in opposite directions, the condition present is one of hyperopia in the centre, and myopia at the periphery.

The instrument requisite for the performance of this simple test is readily extemporized by taking an oblong piece of looking-glass, 3 x 1½ inches, and covering it with paper. About one inch from the end, and on the face of this glass, cut away the paper so as to expose a clear circular portion of the mirror about 1¼ inches in diameter, and on the back of the mirror, at a point corresponding to the centre of this circle, remove the paper and the quicksilver, so as to leave an area of clear glass one-eighth of an inch in diameter.

Any perforated plane mirror will of course answer the purpose equally well. The room should be darkened, and a good light placed above and a little behind the person to be examined, who is seated in front of the examiner about forty inches distant from him. Placing the instrument before the right eye, and looking through the central aperture, the reflected pencil of light from the mirror is projected into the patient's eye. If the right eye is to be examined, the patient is directed to look beyond and just to one side of the right ear of the examiner. If the room be properly darkened, the pupil will be sufficiently dilated to make the examination easy; but if not, a very weak solution of atropine may be used, or a few drops of a two per cent. solution of cocaine may be instilled into the eye about fifteen minutes previous to the examination. The pupillary space appears of a beautiful orange-red color, with some indistinct apparent shadows at the edge of the pupil as the mirror is moved. The mirror is now slightly and rapidly rotated on its vertical or horizontal axis, being careful not to move the head. If there be any error of refraction, the bright illuminated part of the retina will be noticed to move across the pupillary space followed by what appears to be a dark shadow, but which is really a portion of the retina not illuminated. It is the movement of this bright area that will indicate any error of refraction that may exist. If the mirror be turned to the right on the vertical axis, and the illuminated area is seen to move in the same direction, then the eye must be hyperopic, or shortened in its antero-posterior diameter, and the image seen is a virtual image of the illuminated part of the

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retina. Again, if with the same rotation of the mirror, this movement of the bright area is in the opposite direction, or toward the left, then the eye must be myopic, or increased in its antero-posterior diameter, and the image seen is a real inverted image of the illuminated part of the retina. If these two movements of the reflex are very rapid and uncertain, very bright, filling the entire pupillary space, the eye is almost if not fully emmetropic, or, in other words, there is no existing error of refraction. If astigmatism be present, there will be a difference in the movements of the retinal reflex. If, on rotating the mirror, the movements of the reflex in the vertical meridian are in the same direction, the refraction in that meridian is hyperopic; and if the movement in the horizontal meridian is in an opposite direction, the refraction of this meridian must be myopic, and the condition present is known as mixed astigmatism. Should the movements of this reflex be distinct, either with or against the rotation of the mirror in any one meridian—vertical or horizontal—and stationary in the meridian at right angles to that, then this meridian would be emmetropic, and the condition present is known as simple astigmatism — myopic or hyperopic according to the movements of the reflex in each principal meridian. If this astigmatism be at the meridian on the arc of the circle other than that of the vertical or horizontal axes, it will be at once shown by the direction in which the retinal reflex moves, without regard to the rotation of the mirror, at the same time showing the error of refraction.

This test may also be practised with the concave mirror found on the ophthalmoscope, but with this mirror it must be remembered that all the movements of the retinal reflex will be reversed, viz., in myopia the movements will be with the rotation of the mirror, and in hypermetropia they will be in the opposite direction,

This method of retinoscopy was first intoduced to the profession from France, and since then has been largely adopted by the English; but it seems to have met with distinct disfavor among the Germans, one of their professors calling it "the lazy English method;" nor is it yet very generally adopted in this country. Dr. Valk considers it one of the simplest methods for the diagnosis of all errors of refraction, and says that when fully carried out in all its details, it is one of the most exact methods in the hands of the ophthalmologist. In his experience, it has almost invariably agreed with the results obtained by examinations made under atropine with trial glasses and with the ophthalmoscope.

One of the great advantages of the method is that it is not dependent upon subjective statements, but is practically an objective method with positive results, and consequently can be used to determine the refractive condition of children, illiterate persons, and in eyes deficient in visual power—the condition known as amblyopia.

The position taken by the author, that retinoscopy was an easy and desirable method adapted to the wants of the general practitioner, did not meet with the approval of ophthalmologists, who unfortunately were the only ones present who participated in the discussion. The general opinion was that the method required considerable practice and skill; while others went still further and denounced the method as one which was unreliable and incapable of yielding accurate results.

DR. O. D. POMEROY said that there might be eye-strain with a perfectly normal eye; and the reason was to be found in the fact that the ciliary muscle was overworked. There was a limit to its powers of endurance, just as there was in the general muscular system. There were also occasionally very puzzling cases, in which, after correcting the errors of refraction by tenotomies and prisms, and securing a perfect muscular balance, the disagreeable symptoms still persisted.

The great objection to retinoscopy was that it was not only difficult to acquire, but demanded constant practice, and, after all, it merely indicated the existence of refractive errors without determining their degree.

DR. EMIL GRUENING was one of those who did not consider retinoscopy a practical test for the general practitioner, although easy for the ophthalmologist; and, moreover, when practised without atropine, the method was faulty. Only a portion of the hyperopia present might be found, and hence it was necessary to relax the accommodation completely. It was also important that the slightest degree of astigmatism should be corrected; for, he had repeatedly seen benefit from correction of only half a dioptre. But such a small degree of astigmatism would most probably be overlooked in an examination by retinoscopy.

DR. LAMBERT had already called attention to an apparatus which he had devised to facilitate the employment of this method. By using atropine, he had been able to detect one-quarter of a dioptre, and had confirmed this result by subsequent tests with trial glasses. The method, moreover, gives the absolute direction in which the cylinders should be applied; for if a little out of the vertical plane, the shadow inclines slightly toward one side or the other. The method, however, is not easily practised, and is particularly tedious.

Dr. Valk replied that he had used this test very carefully with the plane mirror and without any lens, and it had enabled him to detect one-quarter of a dioptre, the result being afterward confirmed by the use of atropine and trial glasses.

Mention had been made of the rarity with which emmetropia was observed by ophthalmologists. He thought this was largely due to the fact that there is rarely occasion for such people to apply for treatment. He considered the normal eye to be really slightly hypermetropic—*i. e.*, about half a dioptre.

CORRESPONDENCE.

ST. LOUIS.

To the Editor of THE MEDICAL NEWS,

SIR: The largest deal, to borrow a commercial expression, that has been made in medical college affairs has just been consummated, by which the St. Louis Post-Graduate School of Medicine ceases to maintain a separate corporate existence, and becomes a department of the Missouri Medical College. The Post-Graduate School building, which is claimed to be the finest structure of its kind in the United States, has been purchased by the Missouri Medical College, and will be used for the senior classes of the under-graduate department and also for post-graduate classes. It is asserted that the clinics of the Post-Graduate School have been altogether

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the best in the city. The large clinics at the old Missouri College will also be kept up as heretofore.

The Missouri Medical College adopts next year a three-years' graded course. For this, as for many other important advances the profession has to thank the Illinois State Board of Health.

In absorbing the Post-Graduate School of Medicine the Missouri College not only takes the fine building of that school, but takes into its faculty several additional members, viz.: Dr. Horatio N. Spencer, Professor of Otology; Dr. William C. Glasgow, Professor of Diseases of the Throat and Chest; and Dr. George J. Engelmann, Professor of Gynecology. Besides these, Dr. A. J. Steele is to be Clinical Professor of Orthopædics, and Dr. H. W. Herman, Clinical Professor of Diseases of the Nervous System and Electro-therapeutics. This gives the Missouri Medical College a staff of fourteen professors with a large corps of clinical assistants and demonstrators, and a property estimated at $100,000.

On Sunday morning, February 16th, there died at his residence in this city one of the oldest members of the medical profession here, Dr. C. W. Stevens. He was born at Pompey, Onondaga Co., N. Y., June 16, 1817, and was of Welsh and English descent. Having been educated as a civil engineer, he came west in 1838, but feeling dissatisfied with the prospects of success in that profession, he commenced the study of medicine. He attended lectures in Kemper College—now the Missouri Medical College—and was graduated in 1842. In 1844 he was made Demonstrator of Anatomy in that school, and held the position until 1849, when he took the same place in the St. Louis Medical College. Six years later he was assigned to the chair of General, Special, and Surgical Anatomy in the latter school, which he filled ably for thirteen years. In 1868 he resigned his professorship and gave up his practice to take charge of the St. Louis County Insane Asylum. As Superintendent of that institution he did credit to himself and gained a considerable reputation as an expert in insanity. In 1872 he resigned his office and returned to general practice in the city, though much of his work was in the field of neurology and psychiatry, being often called to testify in medico-legal cases. He was a pronounced Union man during the war, and saw several months of field service as a volunteer surgeon. In 1879 he was elected President of the St. Louis Medical Society. From November, 1883, to July, 1886, he was again Superintendent of the St. Louis Insane Asylum. Since that date he has given his time to private practice. In accordance with his own request, his remains were cremated.

The several medical colleges of this city hold their graduating exercises this month. On the evening of March 4th, the Missouri Medical College held its graduating exercises, and at the same time celebrated the fiftieth anniversary of the founding of the institution by Drs. Joseph Nash McDowell and John F. Moore. The number graduated this year was 101.

On March 13th, the forty-eighth annual commencement exercises of the St. Louis Medical College took place, the number of graduates being 22. This school has always consistently maintained an advanced position with regard to requirements for graduation and for ten years has had a compulsory three-years' course of study.

In connection with these exercises were held those of the graduating class of the Missouri Dental College; the dental graduates numbering 32.

The same evening the Homœopathic Medical College of Missouri graduated a class of 25 members. The position of resident physician to the Children's Hospital (Homœopathic) was secured by Dr. D. M. Gibson.

On Thursday morning, March 13th, died at his home in Kansas City, Missouri, a man of very considerable note as a surgeon in the western part of this State. The name of Dr. J. W. Jackson is preëminent in the annals of railroad surgery in this country. In 1874 he was made surgeon-in-chief of the Missouri Pacific Railway, and five years later organized the first railroad hospital in the United States, at Washington, Missouri. In 1881 the hospital was removed to Sedalia, as being a more central point to the extended system of roads which had then been acquired by the Missouri Pacific.

In 1884 the entire Wabash system west of the Mississippi was added to that of the Missouri Pacific, and Dr. Jackson was chief surgeon to the whole system. In 1885 Dr. Jackson resigned his position and was given complete control of the surgical department of the Wabash system. During his service in this position and through his instrumentality four railroad hospitals have been erected, viz., at Springfield, Illinois; Danville, Illinois, Peru, Indiana, and Kansas City, Missouri. It was during his service on the Missouri Pacific system that the hospital building was erected at Fort Worth, Texas, at a cost of $30,000, then considered the finest railroad hospital in the West.

Dr. Jackson was president of the Missouri State Medical Society in 1855-56, president of the National Association of Railway Surgeons during its first year, 1888-89, and was first vice-president of the American Medical Association at the time of his death.

NEWS ITEMS.

Prosecution of Homœopathic Druggists.—Messrs. Boericke & Tafel have recently been on trial in New York City for alleged violation of the law requiring all apothecaries to be registered and licensed. They have two places of business in the city which are conducted as homœopathic pharmacies. The prosecution against them was brought through the instrumentality of the Board of Pharmacy, whose counsel consented to the dismissal of the case after a brief argument by the defendants to the effect that it would be a hardship to compel a homœopathic chemist to appear before a board of examining pharmacists, and that it would probably result in driving out of the city nearly all homœopathic druggists.

Polyclinic Lecture Course.—The following is a continuation of the course of Tuesday evening lectures which is given by the staff of the Philadelphia Polyclinic at the college building, N. W. corner of Broad and Lombard Streets. The lectures begin at eight o'clock, and are free to members of the profession and to medical students. March 11, Dr. B. F. Baer, Abdominal Surgery; March 18, Dr. Thomas J. Mays, Treatment of Asthma; March 25, Dr. John B. Roberts, The Theory of Antiseptic and Aseptic Surgery; April 1, Dr. Charles K. Mills, Hypnotism; April 8, Dr. Thomas G. Morton, Imperfect Symmetry and Spinal Curvature; April 15, Dr. B. Alex-

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ander Randall, The Anatomy of the Labyrinth of the Ear (Illustrated); April 22, Dr. J. Henry C. Simes, Urethrotomy; April 29, Dr. E. P. Davis, Treatment and Prevention of Puerperal Fever; May 6, Dr. Edward Jackson, Heterophoria, or Latent Squint; May 13, Dr. A. B. Hirsh, Newer Methods in Herniotomy; May 20, Dr. C. L. Bower, The Treatment of some common Fractures; May 27, Dr. J. Abbott Cantrell, Scabies—its Symptoms, Diagnosis, and Treatment.

Manitou Springs, Colorado.—Correspondents who have been wintering in the West report a much more agreeable climate at Colorado Springs, "The Saratoga of the West," than at Denver, somewhat further north. The weather in January was glorious. To quote from a letter: "A clear, bright, and balmy sunshine which tempts one to be out in the open air to enjoy it. The winds know how to blow even here, sometimes, although the place is sheltered from the severest of them. We have been walking and driving almost daily, and appetite and ability to sleep have improved greatly. It is a luxury to breathe here for those with lazy lungs." The dryness of the air on the Colorado plateau appears to diminish the sensations alike of heat and cold and almost any degree of winter extremes can be borne without that feeling of chilliness that marks the low temperatures of the East.

Mississippi State Medical Association.—The next annual session of the Mississippi State Medical Association will meet in Jackson, Mississippi, April 16, 1890. Those desiring to report cases or read papers should notify Dr. W. E. Todd, recording secretary, Jackson, Miss.

Cincinnati City Hospital.—At a meeting of the Board of Trustees of the Cincinnati City Hospital, held March 6, 1890, a department for diseases of the throat and nose was created. Dr. E. Sattler and Dr. Max Thorner were elected Laryngologists and Rhinologists to the institution.

Serious Loss by Fire.—The Toronto University with its newly constructed Biological Laboratory was destroyed by fire, February 16th, while it was in the course of preparation for a public reception. The *Lancet* quotes the loss at half a million of dollars, and that the wrecked edifice was the handsomest of its kind in Canada.

Obituary.—The late PROFESSOR KARL WESTPHAL'S thirty years as neurologist in the University of Berlin were marked by many additions to the science of neurology, obtained through earnest work, careful observation, and a conscientious scrutiny of his own results that made unassailable all that he published. His contributions to the study of tabes dorsalis will long be remembered; the loss of the patellar reflex in this disease has been termed "Westphal's symptom," from its discoverer. Some of the other subjects upon which he bestowed special attention were progressive paralysis, epilepsy, paranoia and agoraphobia. The various forms of ophthalmoplegia chiefly interested him during the last few years, and his studies were important not only to the pathology of the affection itself, but also to cerebral anatomy. The combined affections of the spinal cord also engaged his attention, as did the subject of the formation of cavities in the cord, pseudosclerosis, and Thomsen's disease. Most of his papers on the subjects were first published in the *Archives für Psychiatrie*, which he himself edited for almost two decades.

——DR. EDUARD VON WAHL, professor of surgery at the University of Dorpat, and one of the editors of the *St. Petersburger medicinische Wochenschrift*, died January 29th, aged fifty-seven years. He was appointed to the chair of surgery in 1878, following von Bergmann, now of Berlin. He was a fine operator and brilliant teacher, attracting large classes of students to Dorpat and nearly doubling the attendance at the surgical clinic in ten years. He held the rectorship of the University from 1881 to 1885, and devoted much attention to the question of the prevention of the spread of leprosy in Russia, and promoted the establishment of lazar-houses. He urged the clinical study of mental diseases at Dorpat, and he himself bought the ground and buildings necessary for the purpose, and presented them to the University. He lectured in German, but was familiar with several other languages. His death is reported to have been the result of an accident he met with a short time before, by which several of his ribs were fractured.

——MEDICAL DIRECTOR ADRIAN HUDSON, U. S. N., died February 7th, at the Mare Island Hospital, California, from pneumonia, supervening upon influenza. He was a native of Canada and a graduate of the McGill University. He entered the navy in 1861, arriving, after twenty-seven years of varied service in his corps, at the honorable office of Medical Director, in July, 1888. He was in charge of the Mare Island Hospital at the time of his final illness.

——DR. EDWARD L. PLUNKETT, a blind physician of New York City, who was a successful quiz-master, died January 10th, aged forty-three years. He became totally blind at the age of twenty-three, when a college student, in consequence of purulent conjunctivitis.

——DR. HEYMANN, professor of hygiene at the Carolina Institution, Stockholm, and editor of the Swedish journal, *Hygeia*, died from cardiac disease during the delivery of one of his lectures.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 18 TO MARCH 24, 1890.

By direction of the Secretary of War, authority is granted for the admission of MARCUS E. TAYLOR, *Captain and Assistant Surgeon*, to the Army and Navy General Hospital, Hot Springs, Arkansas, for treatment therein.—Par. 6, *S. O., A. G. O.*, March 21, 1890.

JARVIS, N. S., *First Lieutenant and Assistant Surgeon.*—Is granted leave of absence for one month, with permission to apply for an extension of fifteen days.—Par. 1, *S. O. 34, Headquarters Department of the Missouri, Fort Leavenworth, Kansas*, March 20, 1890.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL LECTURES.

DEGENERATION OF THE SEBACEOUS GLANDS. ALOPECIA AREATA. TINEA CIRCINATA. GENERAL ECZEMA. ERYTHEMATOUS AND VESICULAR ECZEMA OF THE HANDS.

A Clinical Lecture,
delivered at the Hospital of the University of Pennsylvania.

BY LOUIS A. DUHRING, M.D.,
PROFESSOR OF SKIN DISEASES.

GENTLEMEN: The first patient is a man, thirty-five years of age, with an affection which evidently has its seat in the sebaceous glands. The lesions are multiple, perhaps ten or twelve in all, and are disseminated upon the face and neck, and are largest and in the most advanced stage on the cheeks. They are characterized by the formation of adherent sebaceous crusts seated upon a hyperæmic base. The process is chronic and sluggish, and has existed for five or six years. Notice the complexion of the man and the peculiarities of the skin. He is a typical blond, with yellowish hair on scalp and face, and has a remarkably florid, injected, rosy skin, with active sebaceous glands. The disease is multiple degeneration of the sebaceous glands, a condition which is frequently met with in elderly persons, and occasionally in those under forty. Some of the lesions have already begun to break down and are accompanied by slight atrophic degeneration. Without doubt, in time some one of them would develop into pronounced epithelial cancer of a mild type, and it is this observation which is important for the future welfare of the man. The case at present would hardly come under the designation of epithelial cancer, and may be preferably called degeneration of the sebaceous glands.

A similar case which has been under my observation for the past six or eight years, began just as this case, and has developed into an extensive, ulcerative, epithelial cancer at several points, as on the back of the hand and about the ear. It is, therefore, of importance that all the lesions receive treatment, with the view of improving the tone and nutrition of the glands and of arresting epithelial proliferation. Sulphur here will prove useful in the form of an ointment, one or two drachms of precipitated sulphur to the ounce. Vleminckx's solution,[1] diluted with from one to four parts of water, will also be of value, and may be employed alternately with the ointment mentioned. Salicylic acid may be added to the same ointment with benefit, in the strength of from ten to thirty grains to the ounce. The cure will be slow, probably extending over a period of months. Should some of the more advanced lesions prove rebellious, lactic acid may be applied, with the view of its acting as a caustic. In the matter of diagnosis, lupus erythematosus is to be excluded because the hyperæmic base is not so well defined and circumscribed, nor as inflammatory and active, as in that disease.

[1] Lime 1 part, sulphur 2 parts, water 20 parts. Slack the lime, add the sulphur and water and boil to 12 parts.

ALOPECIA AREATA.

The young colored man before us exhibits a marked degree of baldness in the form of areas, or patches, and to such an extent as to cause disfigurement, more than one-half of the scalp being bald. He is a mulatto, and the disease is rarer in the colored than in the white race. The loss of hair has taken place gradually during the past three months, and there is no apparent cause for the disease. The eyebrows are also involved.

Of late, considerable discussion has again arisen, especially in France, concerning the nature of this process, some dermatologists of high standing stating that there are two forms of alopecia areata, one distinctly neurotic, the other parasitic. Our own experience in Philadelphia, extending over a score of years and including many cases, leads us to believe that the disease is neurotic, though by no means always occurring in nervous subjects, or even due to evident nervous shock or allied general conditions of health. The cause seems to be an arrest (often sudden) of nutrition of the hair, generally of the scalp only, but not infrequently of other hairy regions, and sometimes of the whole general surface.

The parasitic theory, that the disease is caused by an invasion of the hair-follicles by a vegetable growth, a fungus, has not been proved, and for the majority of cases is at variance with the clinical history of the affection.

The treatment is, as a rule, unsatisfactory, in many instances the baldness remaining uninfluenced by the remedies used, whether local or internal. It must never be forgotten that in young subjects the disease tends to spontaneous cure, in from three to six months. As a stimulating application, tar, as a tincture or ointment; sulphur as an ointment; salicylic acid as an ointment or with alcohol; resorcin; and carbolic acid, are all useful. Strong preparations are usually well borne, for the scalp lacks its natural tone, being smooth, shrunken, and pale in color.

Internally, arsenious acid, in doses of from one-fiftieth to one-twentieth of a grain, thrice daily, is the most reliable remedy, and in some cases acts curatively, but in other instances it proves valueless. It needs to be used for a period of from two to six months, and never in excessive doses, always remembering that a tonic effect to the peripheral nerves is the object desired. The prognosis should in every case be guarded, for the disease pursues its course in an irregular, capricious way, often defying the most energetic and faithful lines of treatment.

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TINEA CIRCINATA.

This patient is a young woman, twenty-five years of age, with an erythematous, diffuse, slightly scaly patch, involving the orbital and temporal regions, and resembling eczema much more than ringworm, but there is another circular, circumscribed, scaly lesion on the side of the neck, the size of a dime, of two weeks' duration, which is characteristic. There is no history of contagion.

The treatment is simple in such cases: any of the well-known parasiticides, such as sulphur and its compounds; naphthol; chrysarobin; corrosive sublimate and white precipitate will usually effect a cure. A lotion of hyposulphite of sodium, one drachm to the ounce of water, applied freely and frequently, is a cleanly, effective, and safe remedy, and one that we often make use of, both in dispensary and private practice, and will be prescribed in this case.

CHRONIC DIFFUSE ECZEMA OF THE GENERAL SURFACE.

This woman, about thirty-five years of age, spare, pale, and ill-nourished, exhibits over the greater part of the general surface, especially upon the face, scalp, forearms, hands, and thighs, a chronic, erythematous, squamous, and fissured eczema, of many years' duration. She is manifestly a great sufferer, and states that she has been both better and worse than at present from time to time, but has never been free from the disease since it began fifteen years ago. There is now but little active inflammation, but the skin is everywhere thickened, and extremely dry, harsh, and rough, and in many places fissured; while the scalp is the seat of a coating of adherent, impacted, whitish scales, suggestive of psoriasis. The flexor surfaces of the elbows are so much fissured as actually to prevent motion of the joint. It is a severe case, and calls for active internal and external treatment.

The nutrition must be improved before cure can be expected. The various functions should be inquired into, the bowels, stomach, and digestion in particular, and everything that will tend to improve the general and the cutaneous nutrition will be advised. Cod-liver oil, abundance of meat and fat, milk, cream, eggs, bread and butter, and malt extract, should have a place in the diet list. Inunctions with a weak tarry ointment, composed of one or two drachms of tar ointment to an ounce of lanolin ointment (six drachms of lanolin and two drachms of lard oil) will probably prove useful, unless the skin rebel against tar. A weak sulphur ointment, twenty or thirty grains to the ounce, may also be mentioned as likely to be of service. The two may further be combined. Ichthyol ointment, from fifteen to thirty grains to the ounce, is sometimes useful; as is also resorcin, in the same strength.

CHRONIC ERYTHEMATOUS AND VESICULAR ECZEMA OF THE HANDS.

The hands of this woman are inflamed, red, and swollen, the skin thickened and boggy, slightly moist and crusted in minute puncta here and there, with subjective symptoms of heat and itching. Tar has been lately applied, but has aggravated the disease, and apparently a good deal of the active inflammation is due to that remedy. For the present a lotion of boric acid, ten grains to the ounce of water, followed by a dusting powder of starch and oxide of zinc, will be ordered; the wash to be used freely for fifteen or twenty minutes three or four times a day. The hands, of course, to be protected with cloths and a muslin roller bandage. In a few days, the oxide of zinc and starch paste, with ten or fifteen grains of salicylic acid to the ounce, may be ordered. In such cases, calomel ointment, twenty or thirty grains to the ounce, often proves valuable.

ERYTHEMATOUS ECZEMA OF THE LEG.

This variety of eczema is observed in the two middle-aged men before us, and is in the form of reddish, slightly scaly, diffuse, not much thickened, patches on the legs. The disease is similar in both cases, though more extensive and chronic in one than in the other, and being subacute, calls for moderately stimulating remedies, as, for example, an ointment of calomel and oxide of zinc ointment, thirty grains to the ounce, or a salicylic acid ointment, fifteen grains to the ounce. Resorcin may also be mentioned as likely to prove useful.

A CASE OF TRAUMATIC DISLOCATION OF THE LENS, ILLUSTRATING THE THEORY OF VISUAL ACCOMMODATION.

A Clinical Lecture.

BY GEORGE C. HARLAN, M.D.,
PROFESSOR OF DISEASES OF THE EYE IN THE PHILADELPHIA POLYCLINIC.

GENTLEMEN: I have asked your special attention to this case as it presents conditions not often met with for observing the effect of dislocation of the lens upon refraction, and for illustrating the generally accepted theory of accommodation.

The patient, a healthy man, twenty-one years of age, states that about two months ago he was struck in the left eye with a piece of wood, that he has never had severe pain, but that vision has been seriously impaired since the accident. He can see much better, however, on looking downward than when his head is erect and his eyes are directed forward. Well-marked oscillation of the iris at once suggests dislocation of the lens, and, after the use of a mydriatic, it is found that the lens is slightly displaced almost directly downward, leaving a narrow space between its upper margin and the edge of the dilated pupil. Through this space a + 12 D. glass gives a distant vision of $\frac{20}{70}$. When the head is thrown well forward and the eye looks down, the lens assumes very nearly its normal position, and No. 1 Sn. can be read with ease at four inches without a glass. The lens is still nearly clear, though oblique illumination shows a slightly increased reflex, and spicula of opacity are forming on its periphery.

The right eye is, in all respects, quite normal, with a distant vision of $\frac{20}{XX}$, and a near point of four inches.

While the lens in the left eye has been completely detached from its suspensory ligament, it is but slightly displaced from its normal position, and has as yet only partially lost its transparency. There is no intra-ocular hæmorrhage, and no additional injury to the eye, such as

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is likely to be inflicted by so severe a blow. The fundus can be seen with the ophthalmoscope with sufficient distinctness to determine that it presents no indication of a myopic formation, which is, in addition, disproved by the refraction of light entering through the space above the lens. In other words, we have here the opportunity to observe, almost without complication, the effect upon the lens of eliminating the influence of its suspensory ligament. This effect has been a degree of myopia which corresponds, with remarkable accuracy, to the accommodative power of the other eye. As the myopia was estimated before we knew the near point of the other eye, and by a member of the class who had no theory to support, the record is not open to suspicion.

You are all familiar with the fact of visual accommodation, and appreciate the necessity for some mechanical contrivance to adapt the focus of the eye to varying distances; but perhaps none of you have any idea how many names famous in science are associated with the study of this point in physiological optics, and what a voluminous literature has arisen from its discussion. Kepler, in 1604, first showed that the eye is a camera forming images, in accordance with optical laws, upon the retina; and demonstrated the necessity that exists in this, as in all other optical instruments, for some mechanism by means of which the image can be kept accurately focussed while the position of the object varies. In other words, he established the fact of visual accommodation. The question of the manner in which this function is performed had still several centuries to wait for its elucidation, which cannot even yet be said to have reached the point of positive demonstration. Helmholtz says there is no other point in physiological optics upon which so many contradictory opinions have been maintained. The apparent impossibility of explaining the process drove many distinguished authorities, long after the time of Kepler, to deny the existence of any arrangement in the interior of the eye for changing the focus, while those who admitted its necessity found their ingenuity severely taxed to suggest a plausible theory.

Each of the following theories has had many earnest and famous advocates. Kepler originated the first, which supposes that the lens is moved bodily forward, without change of curvature, like the lens of an opera-glass. Haller first noticed the contraction of the pupil in accommodation, and thought that it sufficed, by shutting off peripheral rays of light and thus diminishing circles of diffusion upon the retina, to account for the accuracy of near vision. Some maintained that there was a change in the curvature of the cornea, and others that the antero-posterior axis of the globe was elongated by pressure of the external muscles. The latter theory had the support of a number of high authorities, including Buffon, Mickel, Henle, and Listing.

Those observers first struck the true scent who attributed the change of focus to increased convexity of the lens, but they were unable to give convincing reasons for the faith that was in them, and their view was not generally adopted. They thought that the lens was a muscular structure (musculus crystallinus) and that its convexity was increased by the contraction of its own fibres. The name of Thomas Young is particularly associated with this theory. He was the first to support it with experimental proofs, though it had been suggested nearly two hundred years before his time, by Descartes.

The fact that accommodation is accomplished by increase in the convexity of the lens was finally brought to mathematical demonstration by observation of the reflected images of the anterior and posterior surfaces of the lens.

Langenbeck (1849) first showed that changes take place in the size and relative position of these images during accommodation, and Cramer and Helmholtz subjected them to accurate measurement, the former by means of a microscope and micrometer and the latter with an instrument constructed on the principle of the heliometer. Knapp completed the demonstration by a calculation proving that the increase of curvature thus shown is sufficient to accomplish the degree of accommodation effected.

You are familiar with these images in connection with the old "catoptric test" for cataract suggested by Purkinje. When a candle flame is held before the eye, three reflected images may be observed; an erect virtual image formed by the convex surface of the cornea, another of the same kind formed by the anterior convex surface of the lens, and a small inverted actual image formed by the concave posterior surface of the lens, or, more exactly, the anterior surface of the vitreous. It was found that during the act of accommodation the corneal image undergoes absolutely no change either in position or size, and the inverted lens image is just perceptibly diminished, while the image formed by the anterior surface of the lens approaches the cornea and decidedly decreases in size. That visual accommodation is the result of a change in the curvature of the lens is, therefore, a demonstrated fact, but we are still dependent upon theory for an explanation of the exact mechanism by means of which this change is accomplished.

Cramer attributed this function to the iris; supposing that a simultaneous contraction of its circular and radiating fibres exerted a pressure upon the periphery of the anterior surface of the lens, and increased its curvature by bulging forward the centre. This theory was quite generally accepted until Helmholtz reported a case of complete paralysis of the iris, and Graefe one of its traumatic loss, in both of which the power of accommodation remained unaffected. This, of course, threw the iris out of count, and narrowed the discussion to the ciliary muscle as the only possible active agent.

Just how the contraction of this muscle increases the curvature of the lens may be considered still an open question, but the theory of the mechanism of accommodation at present almost universally held to be the most satisfactory, is that advocated by Helmholtz. According to this, the elastic capsule that incloses the gelatinous mass of the lens, will tend to approximate it to the circular form. This tendency is opposed by the suspensory ligament, which is also elastic, and, being attached to the capsule at the periphery of the lens, will keep the latter flattened when in a state of tension. This tension of the suspensory ligament is supposed to exist when the eye is in a state of rest—*i. e.*, when it is adapted to distant vision; while in accommodation for a near point the ligament is relaxed, and the lens is given up to the action of its capsule.

The gray band seen just beyond the attached margin of the iris when the cornea and the anterior part of the sclerotic are removed, formerly described by anatomists as the ciliary ligament, was discovered by Bowman and

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Brücke to be composed of unstriped muscular fibres, which have their origin in the region of the canal of Schlemm, at the corneo-sclerotic junction, and their insertion in the ciliary processes as far back as the ora serrata. When the ciliary muscle and ciliary processes are removed, a beautiful zone with radiating lines is seen, which is still often designated by its old name of zonula of Zinn. The retention of this name, however, can only lead to confusion in the minds of students, as this structure is the suspensory ligament of the lens, and had better be known by the term that indicates its function. It is an elastic transparent membrane, usually described as a continuation of the hyaloid membrane, which becomes thicker and stronger and more elastic at the ora serrata. The appearance of radiating dark-brown striæ is due to the fact that this membrane is thrown into grooves in which the ciliary processes are received, and when we remove the latter some of their pigment is left behind.

For our present purpose we may consider the ciliary ligament as an elastic membrane stretched between the ora serrata and the margin of the lens, and assume that its traction is relaxed when the ora serrata is drawn forward by the contraction of the ciliary muscle. In the case of our patient, the lens is torn away from the ligament, and the elastic contraction of its capsule is, therefore, unopposed, and we find the eye focussed for a near point which corresponds exactly with that reached by the strongest accommodative effort of the other eye. It may seem somewhat anomalous that an organ should be made to "function" by complete separation from all its anatomical connections, but it is, nevertheless, a well-known fact that a healthy lens becomes more convex when removed, with its capsule intact, from the eye.

ORIGINAL ARTICLES.

ALBUMINURIA IN THE APPARENTLY HEALTHY.[1]

BY W. H. WASHBURN, M.D.,
OF MILWAUKEE.

DURING the past ten or fifteen years great activity has been displayed in investigating the causes and probable results of albuminuria unassociated with those forms of kidney disease to which the name of Bright has been attached. The subject has occupied a considerable portion of the time and attention of the great medical societies on both sides of the Atlantic. At the meeting of the Association of American Physicians held at Washington, D. C., in 1888, Professor Tyson, of Philadelphia, presented a paper entitled "The Relation of Albuminuria to Life Insurance." At the meeting of the British Medical Association held at Leeds, in 1889, Professor Pavy read a paper entitled "A Discussion of the Prognosis of Cases of Albuminuria, with Special Reference to Life Insurance." These papers were fully discussed.

Tyson objects to such terms as normal, physiological, intermittent, cyclical, and alimentary albuminuria, and proposes the term "functional" as meaning "that there is somewhere a functional derangement, as a result of which, without structural alteration in the kidney, albumin transudes through the vessel walls along with the normal urine constituents." For myself, I object to the term "functional disease," believing that there is no perverted *function* without perversion of structure. Dr. George Johnson (*British Medical Journal*, February 2, 1889, p. 225) objects to all these terms and proposes in their stead "latent albuminuria."

We understand by latency that which is hidden, concealed, or inappreciable. Latent heat is the best example we have of latency, and latent heat is absolutely inappreciable, either to the senses or by the thermometer.

The form of albuminuria to which it is proposed to apply this name cannot properly be compared with latency as we are thus acquainted with it, for this albuminuria is as appreciable as that which accompanies grave kidney disease. Hence I believe "albuminuria in the apparently healthy" to be a designation the most free from objection.

Dr. Pye Smith, of London, examiner for an English life insurance company, says he relies upon the heat and nitric acid tests for albumin, and deplores the introduction of new chemical tests on the ground that we will thereby "imperil the clinical results of the past fifty years." The philosopher seeks truth and should care nothing for the effect which the discovery of such truth may have upon the "clinical results of the past fifty years." What we desire to ascertain is, what relation albuminuria in the apparently healthy bears to the expectation of life; and if such expectation is diminished, our business is to investigate as to the best means of checking the appearance of albumin in the urine.

At the present time the balance of opinion is decidedly in favor of the view that there is no such thing as physiological albuminuria, but that it is pathological in every case, even though a mere trace be present. There is danger that "the long-continued filtration of albumin among the gland cells of the convoluted tubes may by degrees so disorganize them as to render them incapable of performing their excretory function." However, Dr. George Johnson has recorded cases of seven, ten, fifteen, and twenty years' standing which have not resulted in serious disease of the kidneys; the case of seven years' duration fully recovering.

While it has been abundantly proven that albumin may be present in the urine in considerable quantity without indicating serious disease of the kidneys, it is also true that serious disease of the kidneys may be present without the appearance of albumin in the urine. Mahomed demonstrated by post-mortem examinations at Guy's Hospital that this may be the case, the only indications pointing to kidney dis-

[1] Read before the Milwaukee Clinical Society, March 11, 1890.

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ease being "increased tension of the pulse," a "heaving left ventricle," and increased quantity of urine. These observations have been confirmed by Dieulafoy, and this has been called the pre-albuminuric stage of Bright's disease. Bartels, of Kiel (Ziemssen's *Cyclopædia*, vol. xv. p. 440), relates a case of granular degeneration of the kidneys which was under his care for some time, in which no albumin appeared at any time, and hence the fact that renal disease existed was not discovered during the life of the patient, but was made apparent at the autopsy. This case was remarkable, also, in that the temperature of the patient in the rectum sank to the low point of 83° F., from which condition the patient rallied and lived some weeks. Professor Da Costa relates a case in his work on *Diagnosis* (4th edition), where there was a marked deposit for some time of crystals of oxalate of lime, accompanied by tube-casts of the hyaline and waxy varieties, and yet no albumin was detected either by heat or nitric acid. Under treatment the oxalate of lime crystals disappeared from the urine, also the tube-casts, and there has never since been any indication of degeneration of the kidneys. The question arises here as to whether albumin would not have been found in these cases had some of the later and more delicate tests been applied.

Dr. Posner, quoted by the *American Journal of the Medical Sciences*, July, 1887, p. 236, says that he believes that serum-albumin is normally present in the urine in infinitesimal quantities, but still sufficient, in most cases, to be detected with such delicate tests as picric acid. Normal urine contains 0.00032 per cent. of mucin, and there is often present a much larger quantity, and as picric acid will detect albumin when it is present in the proportion of 0.00015 per cent. it would not be strange if enough albumin were liberated in solution to give the reaction with this delicate test.

In order to verify this opinion of Posner I tested with picric acid by the contact method, and also with the phenic-acetic test, and with a solution of citric acid of a specific gravity of 1008, by the same method, samples of urine from fifty persons in perfect health, all living in good sanitary surroundings, and in easy circumstances. Their ages ranged from fourteen to fifty-five years. In every instance, at the line of contact of the two fluids, the characteristic cloud appeared with more or less distinctness, indicating the presence of an albuminoid.

Grainger Stewart some time ago reported finding albumin in the urine in 31 per cent. of 407 persons examined in apparent good health. These people were all in the lower walks of life and living in unsanitary surroundings. In none of these cases were any other evidences of renal disease found.

Dr. G. R. Shepherd, in a recent paper before the Connecticut Medical Society, reported albumin present in the urine in two per cent. of 35,000 cases collected from various sources; that the percentage was greater among brain-workers than among muscle-workers; and that while in healthy persons it did not appear after meals, in those who suffered from dyspepsia and oxaluria it was very apt to appear.

During the twenty-two months between April 1, 1888, and February 1, 1890, I examined 338 applicants for life insurance, in which an examination of the urine was required. These applicants were all apparently healthy. Albumin was found in the urine in twenty of these cases, being 5.91 per cent. It would, of course, be interesting as well as instructive to be able to follow up all these cases and trace, if possible, the albuminuria to its cause, but this, in the nature of things, could not be done. Nevertheless, I have been fortunate enough to be able to investigate a number of them, and have selected three which are reported in this paper.

Case I.—W. J. A , aged thirty-four years, light complexion; height five feet ten inches; weight 150 pounds. Family and personal history good; habits of life correct; very temperate in the use of alcoholics, in fact almost a teetotaler. He is a brain-worker. Examined, February 27, 1889. Urine: specific gravity 1024, reaction acid, albumin present in sufficient quantity to be shown by the contact method with nitric acid. Specimens of this gentleman's urine were examined, which were passed at different hours of the day, from immediately after rising in the morning to the last thing before going to bed at night. That urine which came first from the bladder was examined separately from that which came last. In every instance the albumin appeared in about the same quantity. The urine was strongly acid in reaction, and ranged in specific gravity from 1010 to 1026, being usually about 1018. No casts were found in the urinary sediment at any time. I had examined the urine of this man several times previous to February 27, 1889, and had found it normal. The fact, therefore, that the specific gravity and amount were normal, and that the microscope revealed oxalate of lime crystals in great abundance in the urinary sediment, and the further fact that he was annoyed by flatulent indigestion, led to the diagnosis of albuminuria, due to the presence in the urine of the sharp and irritating crystals of oxalate of lime. These crystals, moreover, were found in the urine immediately after leaving the bladder, indicating that their presence there was not due to chemical action after the urine was passed. The formation of the oxalate crystals was attributed to digestive disturbances. Nitro-muriatic acid was ordered with each meal, March 16th; on March 20th the urine was free from albumin, and has remained so, the last examination having been made November 29, 1889.

Case II.—J. C. S , aged thirty-one years, foreman in a printing establishment. Good family

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and personal history. A year before the date of examination, this man suffered from typhoid fever, was not critically ill, but during the course of the disease had some urinary trouble, the urine being suppressed for nearly two days. September 16, 1889, I examined him for life insurance. The urine was passed at 2 P.M.; specific gravity 1022, reaction acid, albumin present in quite large quantity. On examination of the urinary sediment, the microscope revealed a few crystals of oxalate of lime, epithelial cells, a few leucocytes, cylindroids of mucin, and a few hyaline tube-casts. September 18th, two examinations failed to show any albumin in the urine; the microscopic examination showed only a few leucocytes in the sediment. September 19th, no albumin, the microscope showing only a few epithelial cells and cylindroids of mucin. From September 20th to November 1st repeated examinations failed to show the presence of albumin. Since the time when the patient suffered from typhoid fever, he has noticed that whenever he has a "cold" his urine is passed in smaller quantities and oftener than normal, and such was the condition of affairs when the first examination was made.

Dr. Wilks (*Lancet*, March, 1873, p. 147) says albuminuria may be caused by a "cold," that cold may set up a condition of the urinary tubules similar to that of the bronchial tubes, and that the condition may be only temporary, but that if it continues six months it is apt to become incurable. This case appears to me to be one of this origin, due to temporary catarrh of the urinary tubules.

CASE III.—The third case to which I wish to direct attention is that of an attorney, aged twenty-five years, of sedentary habits. His father died of apoplexy, at the age of fifty-eight years, and his mother of consumption, aged thirty-one years. Family history otherwise good. He has never undergone any sickness himself. Height, five feet ten inches, weight 185 pounds. Examined June 8th, when he appeared in robust health, the pulmonary and cardiac sounds being normal. Pulse 76, regular, steady, and soft. Urine passed at 3 P. M., acid, specific gravity 1022, free from sugar. Albumin present in sufficient quantity to be detected by cold nitric acid test. Microscopic examination of sediment entirely negative. From June 8th to November 1, 1889, examinations were made of his urine eight or ten times per month, at all hours of the day. Numerous microscopic examinations were made during this time. There were found at times epithelial cells which I thought were from the bladder; on one occasion crystals of oxalate of lime; sometimes cylindroids of mucin, and, on June 22d and July 1st and 4th, a few hyaline tube-casts. Albumin was found in every specimen of urine, passed at all hours of the day. During all this time the specific gravity was about normal, the lowest being 1014, and that only once, the range being from 1018 to 1026. Every specimen of urine examined was markedly acid. Theorizing, then, that this albuminuria was possibly due to commencing lithæmic nephritis, I prescribed lithia water, and restricted his diet. I afterward tried lithiated hydrangea and a vegetarian diet. The urine continuing to be strongly acid, and the albuminuria persisting, I prescribed phosphate of sodium and then Vichy water. The Vichy water rendered the urine alkaline, but the albuminuria was entirely uninfluenced by the treatment. About November 1st the patient entered a gymnasium, and since that time has devoted, on an average, one hour per day to active exercise; by this means he has reduced his weight to 166 pounds. About the middle of November the albumin disappeared from his urine, and has not been detected since.

Now, it seems to me that—if it be true that the function of renal epithelium (among other things) is to convert albuminous constituents of the blood, not elsewhere converted, into urea and other nitrogenous excreta, as explained by Ralfe—this case admirably illustrates a condition under which the epithelium was unable to discharge thoroughly this function. A young man, of full habit, a good eater, florid complexion, in fact plethoric, leading a sedentary life, the blood containing more albuminous constituents than were converted by the liver and in the muscles of the body, and more than the renal epithelium was able to convert, and hence a certain amount was allowed to filter through into the tubules, and to escape with the urine.

Diet made but very slight difference in the amount of albumin passed in the urine. Medicines produced no effect whatever, but the moment increased muscular activity resulted in the conversion of a larger amount of albuminous blood constituents into urea, so that there was less to be converted by the renal epithelium, albumin disappeared from the urine.

803 GRAND AVENUE.

THE CORPUS LUTEUM "OF PREGNANCY" IN NON-PREGNANT WOMEN.

BY BARTON COOKE HIRST, M.D.,
OF PHILADELPHIA.

IN the past year I have seen two cases that might come under this heading: well-developed corpora lutea, exhibiting all the macroscopic appearances of these bodies at the period of greatest development in a pregnant woman, and yet situated in ovaries taken from women, beyond a doubt, not pregnant.

CASE I.—Miss S., aged twenty-four, a very small, fragile-looking person, with no mammary development. First menstruated at nineteen; since then her menses have returned at irregular and long intervals. At the menstrual period, although there may be no flow, the girl has intense headaches and disturbances of vision, with an aggravation of pains in the back and left groin, which constantly trouble her to some degree. She has consulted several ophthalmologists, who told her that the eye symptoms were reflex, depending upon some abnormality in the sexual organs. For three months past she has been treated, without success, by a well-

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known gynecologist, who finally advised an oöphorectomy. She was sent to me by Dr. Oliver, who was treating her eyes, for examination and treatment. *Examination:* Uterus infantile, scarcely larger than the terminal joint of one's thumb, in good position, and movable. An enlarged ovary, very sensitive, to be felt on left side. I recommended an exploratory incision, and, possibly, an oöphorectomy. The operation was done in April, 1889. Both ovaries, congested and enlarged, were removed. That upon the left side contained a corpus luteum in every way like the same body of pregnancy in its fullest development. It measured three-quarters of an inch in length, a trifle less in breadth, and occupied about half the ovary. (Fig. 1.)

FIG. 1.

This inequality in development of ovaries and uterus, although observed before, is to me very strange. Ovulation here, no doubt occurred in a regular and vigorous fashion, while menstruation, as a rule, failed to appear. The sexual organs, deprived of their periodic depletion, remained constantly congested, and the individual was made miserable, and incapacitated for work. She is now, a year after the operation, employed as a store-girl, and is almost entirely free from her former symptoms.

CASE II.—F. R., aged twenty-three, had her first child fourteen months ago. Since her delivery menstruation has returned but four times. She complains of severe pain in the right lower abdomen, which has disabled her, and compelled her to enter the Philadelphia Hospital for relief. *Examination:* Uterus enlarged, cavity 3½ inches; in fairly good position, partially fixed. In right broad ligament is a large, firm tumor, intimately attached to the uterine wall, and extending out toward the lateral wall of the pelvis. With the idea that a pyosalpinx existed, laparotomy was advised and agreed to. The tumor was found, however, to be an extra-mural fibroma, growing between the layers of the broad ligament, and associated with some pelvic inflammation. Both ovaries were removed. In one a corpus luteum "of pregnancy" was discovered, as illustrated in the accompanying cut taken from a photograph. (Fig. 2.)

It may be claimed that there is an element of doubt in this report, but intra-uterine pregnancy was excluded by the size of the uterus and a long-continued observation of the patient, while interstitial pregnancy was excluded, I think, by the fact

FIG. 2.

that the tube ran above the tumor and was not inserted in the upper, outer corner of it. These two cases illustrate, what is already known, that the corpora lutea "of menstruation" and "of pregnancy" are the result of congestion different in degree and duration, and have nothing to do specifically with the conditions from which they are named. One comes from a temporary hyperæmia of the ovary, associated with rupture of the Graafian follicle; the other from a hyperæmia of higher grade and longer duration. It will be observed that the mere presence of over-grown corpora lutea in the ovaries did not constitute an indication for their removal. This, naturally, it should never do, and yet oöphorectomy has been advocated for "endothelioma of the ovary," which, to my mind, is nothing in the world but the proliferating cells of membranæ granulosæ in ruptured Graafian follicles engaged in the formation of corpora lutea.[1] This, it seems to me, is also the explanation of the tumors described by Dr. Heneage Gibbes,[2] although he distinctly states that corpora lutea can be distinguished from the growths he describes. A careful microscopic study of my specimens will be made by Dr. Piersol, Professor of Histology and Embryology in the University of Pennsylvania, who will prepare a description of their histology.

248 SOUTH SEVENTEENTH STREET.

Bellevue Commencement.—The Bellevue Hospital Medical College, at its recent commencement, conferred diplomas on 144 men.

[1] M. A. D. Jones: New York Medical Journal, September 28, 1889.

[2] Boston Medical and Surgical Journal, January 30, 1890.

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THE WAKEFULNESS OF NEURASTHENIA AS AFFECTED BY SEASIDE RESIDENCE; ITS SUCCESSFUL MANAGEMENT AND CURE.

BY W. H. DALY, M.D.,
OF PITTSBURG, PA.

OF all the suffering to which unfortunate humanity is subject, none can compare in its horrible character to the persistent insomnia that is made worse by hypnotics, and especially worse by a residence at the seaside. About twenty-two such cases have fallen under my notice while getting a history of concomitant disease of the upper air-passages, for which they consulted me, during the past three years, and I have been further interested because of a case in which I was peculiarly concerned, and of whose history I have been fully informed.

It is not my purpose, however, to weary the reader with the details of cases, but rather to give the summary of my observations, and earnestly to call attention to the great need for discrimination in the sending of patients afflicted with insomnia to the seaside; and more especially to ask those who are located at seaside resorts, not to allow their honest zeal and enthusiasm for a particular and pet resort to lead them to believe that its air and surroundings will cure anything, from knock-knees to a disposition on the part of children to scratch furniture. The average medical man may make the mistake of sending a neurasthenic patient who has insomnia to the seaside, that would be better at some quiet inland resort, or possibly better at home, but the experienced medical man at the seaside should, in such a case, have the moral courage to say promptly to such a one, who is not likely to be benefited: This is not the place for you to obtain a physiological cure of your insomnia—the only cure worth having, by the way, and the only one, especially, that a medical man, if so afflicted, should ever undertake to accept, since the perilous practice of purchasing sleep by means of hypnotics is one that in *his* hands must sooner or later lead to destruction, permanent and irreparable, if persisted in, as these means, alas for his own welfare, are so readily obtainable by him. Now what shall we do for the sufferer from insomnia? If we find his own home must be abandoned owing to business cares that will occupy his mind and attention if he remains, and if we also find the seaside aggravates the wakefulness, then send him inland far enough to get him away from the ocean's roar, while he will still have the tonic effect of the sea air, if by a brief experience in this he should prove to profit by it. But do not persevere in trying to have your patient *overcome* obstacles that he ought, and you ought to have him, simply to shun, and thereby gain time and comfort for him and hasten his cure. In other words, do not insist too strongly that your patients shall repeatedly and with futility try to adapt their unfortunate conditions to your cast-iron notions of sanitary regimen; but rather adapt your regimen to fit the conditions of the case. This will require no little study on your part, but success will repay the labor of thought in this respect. The patient ought to be encouraged to join quiet friends in quiet amusements, but even this should not be insisted on too strongly. The exercise should be of the quietest kind. I have known eminent neurologists who advised their insomnia patients rather indiscriminately to take horseback exercise. Now I have known the excitement and tension due to this exercise, in many cases, to be followed by wakefulness quite surely and certainly and upon repeated trials. Conversation or cards after supper, or a pleasant short walk before bedtime, and, before retiring, the cold douche to the head or the feet as experience shall dictate. In fact, the regimen in insomnia is largely a matter of experience, and not to be adhered to with unreasonable pertinacity. But absolute quiet is one of the essentials for the wooing of sleep, to the wakeful neurasthenic. The walking over the floor above or some one taking a bath in an adjoining room, or the crowing of a cock, or the gnawing of a mouse, or the rustling of the leaves on the trees beside the window, or the chirping of a cricket will be sufficient to rivet the attention of the insomnia patient and destroy all vestige of sleep, until from utter exhaustion a half hour of partial oblivion may be obtained long after daylight, when there is a lull or period of repose and quiet between the noises of the night and the coming day of bustle and business.

No talk of business or upon business subjects or enterprises should be indulged in, especially in the after-part of the day; this is most certainly fatal to the securing of sleep. Nothing irritating should be said by friends, and all subjects that are known to be distasteful to the wakeful patient should be strictly tabooed, as the wakeful neurasthenic is sensitive to an extreme.

Now that we have said briefly what not to do for this class of patients, it is in order for us to ask what we shall do for their comfort and restoration—for what secures the former is certain, sooner or later, to be followed by the latter. Briefly, it is this: Get along without hypnotics or so-called nerve tonics; the one hundred and one preparations of the phosphates are a fashionable therapeutic fad, that the manufacturer got up for the benefit of his own pocket, and are about as groundless in therapeutics as the statement of the ostensible German savant, which we have all swallowed, more or less, viz., "Without phosphorus there is no thought"—"Ohne Phosphor keine gedank." Now, this is a most thoughtless statement, and cannot be verified,

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and the exhibition of the phosphates in any case must act—if they do any good at all, which is questionable—by reason of the other ingredients which render them more or less an elixir and a simple tonic.

The most efficient plan of treatment in the wakeful neurasthenic is a mild alterative and tonic plan, coupled with a close attention to the state of the liver by means of mild mercurial laxatives. I say the liver, but I should also say the stomach, as these two organs are the ones that will reflect their influence upon the brain. A quarter of a grain of calomel at bedtime, with two drachms, more or less, of fluid extract of senna every night, or second or third night as needed, until the yellow stools, nearly always present in the neurasthenic, are tinged with bile. Keep this condition up and keep up the treatment, being careful not to ptyalize. Use wines or whiskey, when they agree, but in the most moderate quantities, and only in those cases where there is no feeling on the part of the patient of a sense of heat in the head or other evidence of cerebral congestion. In congestive cases, four to six leeches applied to the mastoid region at bedtime, and the wounds allowed to bleed until they stop of themselves, will prove of nearly certain benefit, and very often cure. If one trial of the leeches disappoint, repeat it in a night or two, or even take blood from the arm until cerebral congestion is manifestly relieved, and thus enable the distended cerebral vessels to regain their tone, in order that they may assume the needed anæmic condition required for natural slumber. And while you are keeping all this in view, I may assure you without doubt that the practitioner who attends to the condition of the liver, stomach, and secretions from the alterative standpoint is the one who will restore his patients to health again. We have had, and now have, much of so-called restorative medicine; and we follow the fashions of the day as strictly and surely in medicine—shame it is to confess it—as do the fair proprietresses of a dozen bonnets or gowns, and we look to a few leaders who set the styles in our therapeutics and we follow them blindly until we stumble across some new fellow who thinks he knows it all, and, like the hounds who have jumped a new hare, we dash after him until we lose the trail, or rather, lose our patience with a *c*, and sometimes also, lose our patients with a *t*.

Broussais is dead, his doctrines are long since dead and buried; let's look the old fellow up again, and apply some of the hints that he can give as to the physiological doctrine of the liver; put some of the old therapeutics in force with reference to the liver in your wakeful neurasthenics. Do it gently, however; do not try to coax it into action by means of trifling placebos, but put the spur gently to the old laggard and see that its rowel is deftly covered with an amalgam, and this with rest, coupled with quiet and reasonable time, proper food, and mild tonics, will do more, and do it permanently, than all of the so-called nerve foods and brain foods and other swindles with which the credulous doctor and more credulous patient are commonly at the present day carried along with that hope deferred which always maketh the heart sick.

THE OPERATIVE TREATMENT OF HIP DISEASE.[1]

By De FOREST WILLARD, M.D.,
CLINICAL PROFESSOR OF ORTHOPÆDIC SURGERY IN THE UNIVERSITY OF PENNSYLVANIA, SURGEON TO PRESBYTERIAN HOSPITAL, ETC.

I TRUST that it will not be inferred from the title of this paper that I look upon the operative treatment of hip disease as the chief element in the management of this affection; on the contrary I regard mechanical and hygienic measures as of the greatest importance, and acknowledge that operative procedures are, like amputations, confessions of defeat; yet operative measures are necessary in a considerable number of cases.

It may, perhaps, be very justly claimed that there are two classes of orthopædic surgeons; the one, viewing apparatus alone as the chief element in the cure of all malformations and deformities; the other class regarding orthopædic surgery as a branch of general surgery demanding the highest degree of general surgical knowledge and skill, yet insisting in addition that mechanical measures and the various forms of apparatus, both before and after operation, are of just as much importance as is a splint after the reduction of a fracture, the necessary reduction and adjustment of the fragments being but a small part of the cure.

Relapses and poor results will occur in the hands of the most careful orthopædic surgeons from neglect and ignorance on the part of the patient, but the worst and most frequent failures are found in the cases where the surgeon, by his words and acts, gives rise to the assumption that he has cured the disease by operation alone. I acknowledge that my predilections and surgical training render me partial to the speedy results of the knife; yet, I value in the highest degree mechanical measures both before and after operation, and am also especially careful to put the system in the best possible condition to resist the tuberculous process.

A wise decision as to the class of cases of hip disease requiring operative means is an exceedingly important one. I must confess that I am often puzzled in regard to fixing an absolute line beyond which it becomes imperative to interfere. I should be exceedingly glad if the American Orthopædic Association could agree upon absolute rules in regard

[1] Read before the American Orthopædic Association, at Boston, September, 1889.

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to cases that should, or should not, receive operation; but from my knowledge of the practice and teaching of the several members composing this body, I am sure that there would be a great diversity of ideas and of practice; from those, on the one hand, who never operate, to those on the other who practically make excision their rule of practice.

Cases concerning which there is the least doubt are those in the third stage, with multiple sinuses pouring out unhealthy pus, which drain is rapidly exhausting the patient and threatening dissolution. Yet certain surgeons contend that cases in the late suppurative stage are only suitable for drainage, not for excision. Other cases demanding interference are those showing undoubted evidences of extensive degeneration of tissue with great flexion and adduction, as are also those extremely painful cases of caries sicca, where, without suppuration, the patient sinks, and all forms of mechanical treatment fail to give relief. Albuminuric cases and those showing evidences of commencing waxy changes can often also be benefited by operation, but all these cases have for years been looked upon as at least justifiable ones for interference.

With increased knowledge, however, and especially with increased facilities for operation, due to the greatly diminished risk secured by the use of antiseptics, we ought to advance our lines and rescue a larger number from the tedious delay and crippling results which are so common in this disease. These cases deserve at our hands the most careful attention and skill that can be given them, and American surgery, quick to embrace successful practice, no matter from whence it originates, should give no uncertain sound.

As to the necessity of operation, much will depend upon the condition and surroundings of the patient. It is very justly claimed that in many cases operative means are unnecessary, and there are many surgeons who hold that excision is never necessary. Personally, I can say, as regards the value of careful attention to detail and the application of strict mechanical control, that I consider them so valuable that I have never yet excised a hip-joint in private practice where the individual has been under my care from the inception of the disease. I believe that it is very rarely required under such circumstances, but there come to all of us a great mass of cases with hips riddled with sinuses, pouring out quantities of pus, whom we cannot treat with any certainty that a single instruction will be thoroughly followed, and, with the almost absolute certainty that the disease will rapidly progress or that death will follow. This class of cases stands upon an entirely different basis and must be treated in the way that will give the best results in the shortest time, and we cannot hope to accomplish even that little unless they are received into the wards of a hospital. Instructions that are disobeyed, apparatus that is misapplied, can never give good results.

Before operating it is important that we consider three questions:

1. Is life saved?
2. Is time gained?
3. Is the resulting limb more useful?

1. Is life saved? To answer this question properly would require a careful study of what may be called the natural death-rate from hip disease practically untreated, and secondly, when carefully treated with the utmost attention to every detail, and by various forms of mechanical appliances. It is exceedingly difficult to classify the statistics upon this point, because there are only a few cases in which a certain form of treatment is not instituted; and secondly, even with apparatus there is the greatest diversity of methods. In the large majority of cases, moreover, treatment is interrupted by the patient being placed in the care of some other physician, and thus the course of the case in its entirety is lost and it becomes valueless as regards statistical importance. This is true more frequently as regards hip disease than of other conditions, for the reason that treatment of these cases extends over several years, and there is, therefore, greater opportunity for such change.

Judging from Thomas's statement, we would consider that all cases, even suppurative ones, are curable without deformity, while Hueter takes the gloomy view that only 5 per cent. of suppurative cases, with flexion, adduction, and internal rotation, heal; in fact, he looks upon tuberculous suppurative cases as practically hopeless.

Gibney in eighty cured cases found that forty-eight, at least, had had abscesses. Yale gives the death-rate of conservatively treated cases, without operation, as 31 per cent.; Gibney, 12 per cent.; Clinical Society of London, 33 per cent.; Taylor, 2½ per cent.—the latter all in private practice.

In cases not operated upon one-half are suppurative and 50 per cent. recover without serious loss of motion.

In 837 cases of excision 19 per cent. of the deaths following operation were from rapid miliary tuberculosis.

In 144 cases Sack gives the death-rate as 25; 13 of which were from tuberculosis.

Frosch reports 166 excisions, with 33 per cent. of deaths, one-half of which were from tuberculosis.

Croft reports that 30 per cent. of deaths are from tuberculosis. Under antisepsis the death-rate has diminished, after excision, from 33 to 15 per cent.

Marsh gives 401 cases of hip disease treated without operation, of which 31 per cent. did not suppurate. Of suppurative cases 42 per cent. were cured, and of non-suppurative cases 69 per cent. In suppurative cases treated without operation 33 per cent.

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died, as against 10 per cent. in non-suppurative; 9 per cent. of the latter recovered with useful limbs, and only 10 per cent. died, of which deaths 9 per cent. were from tuberculosis.

The percentage of deaths in suppurative cases which occurred from albuminuria, waxy degeneration, and exhaustion could probably have been saved by early excision. Of late excisions 69 per cent. re-suppurated.

In Marsh's collection of 614 cases treated by prolonged rest the mortality was 6 per cent., but it is not proper that the mortality of these cases, which probably were suppurative in a minor degree, should be compared with the 20 per cent. of deaths from excision, as the circumstances of the cases were entirely different. In late excisions 10 per cent. died, and from 20 to 30 per cent. showed no improvement. In the first stage the mortality is, as we know, from 6 to 8 per cent. In the late stage of suppurative cases with amyloid degeneration, the mortality rises from 30 to 50 per cent. By thorough rest the mortality has been reduced in the Alexandria Hospital from 30 to 5 per cent., while 70 per cent. recover with slight loss of motion.

Croft puts the general mortality of hip disease as 35 per cent. Although one of the arguments in favor of early excision is the prevention of tubercular infection, yet, as eighteen or nineteen escape this danger in the natural course of the disease to one that becomes infected, this one does not justify the deforming results of early operation; especially if, as in the early stage, it is impossible to diagnose the exact number of foci of disease that are present, or that may exist in other portions of the body.

The effect of operation upon the mortality from tuberculous infection seems to be very slight.

My own estimate of the natural death-rate in this country would certainly not fix it above 15 to 20 per cent., while in private practice the result would be below 5 per cent.

The death-rate from excision, like that of the normal death-rate above referred to, varies exceedingly, and gives rise to as great a diversity of opinion. Leisrinks gives 63 per cent, Sayre 34 per cent., Culbertson 41 per cent., London Clinical Society Report 37, Caumont, before the use of antisepsis, 66, after its introduction, 41 (11 per cent. died from the operation). Wright, out of 1700 collected cases, makes it 33 per cent., which seems a fair deduction.

Wright states (*British Medical Journal*, December 15, 1888) that incision has not given him any better results than excision; consequently we may, for the present line of argument, practically consider them as one operation.

The saving of life is, of course, the most important consideration of the surgeon, but, if the question were to be considered from this standpoint alone, we should at once join the ranks of those who advise early excision, since the risk from operation at that stage would not be great with asepsis, and in many cases of tubercular infection death would be avoided. Carrying out this line of reasoning, we should arrive at the *reductio ad absurdum* that all cases of hip inflammation should be excised so early that there would be no possibility of the disease being more than a local difficulty.

But even if the saving of life is a prime consideration, other objects must not be overlooked. A large percentage of operative cases die from lardaceous degeneration, of exhaustion from suppuration, or from tuberculous conditions—few from the operation itself.

It would be obviously unfair, however, to compare the results of excision with the results of all classes of cases dying from what may be called the natural results of hip disease, since operative cases, as a rule, are selected from the very worst. The only just method of comparison would be to compare 1000 cases of excision with 1000 equally serious ones, which did not require operative treatment. Could such a comparison be instituted, I believe that the operative course of treatment would yield a less percentage of deaths than the more conservative plan; while at present it occupies a higher place. Were we to compare early resection with similar cases where rigid rest has been secured to the articulation during treatment, doubtless lives would be saved and time gained by the former plan; but as regards locomotive powers, the balance would be in favor of rest.

2. Is time gained? With the practice of antisepsis, which favors rapid healing, we frequently obtain speedy closure of the wound. If any one wishes to have excellent statistics, let him report all cases about the sixth week "perfectly healed." But wait a few weeks more; a small sinus appears, a long period of suppuration follows, and the patient either finally dies, or is cured at the end of possibly a little shorter period than would have been occupied by a natural cure, but the limb is less useful as a walking member.

Even Croft, who favors early excision, acknowledges that the majority of his cases require close watching from one to two years after excision—one-half of them two years, and that ultimate suppuration is very likely to appear.

Wright acknowledges that only 17 per cent. of cases of excision are satisfactory in their results; that 25 per cent. were absolute failures, and that nearly 60 per cent. were suppurating a year after operation, making over 80 per cent. with unsatisfactory results. The cases reported within a few weeks or even a few months after the operation are

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not relapses; the disease has continued uninterruptedly in spite of operation, but, as in non-operative cases, the pus has been slow in coming to the surface. True relapses are so common in apparently cured cases as to warn us against too great enthusiasm. I am at the present time treating five cases of relapsed hip disease that have returned after forty-five, nineteen, sixteen, ten, and six years respectively.

In removal of diseased bone-tissue either by excision or by erasion, the underlying layer of bone-cells is necessarily injured, and the inflammation thus set up causes caries with opening of the sinuses and suppuration for a certain period of time. To minimize this element of failure, the scoop should be very sharp and all fragments should be washed out immediately.

Excision in the later stage will undoubtedly yield from 8 to 10 per cent. of deaths within the first few weeks after operation, and fully three-fourths of the cases may be expected to relapse. In probably one-third of the cases improvement is favorable at the beginning, but the return of the disease in the next few months is to be confidently expected. When tubercle has again inoculated the soft tissues a vigorous scraping and cutting out of sinuses may hasten closure.

In cases of great deformity, with marked shortening of the limb and great adduction across its fellow, decided gain in position may be secured by excision, although if these cases are progressing favorably they may be permitted to ankylose when subsequent osteotomy will bring them into good position. In suppurative cases tubercular infection of the system is to be expected in from 5 to 8 per cent. In non-suppurative cases the percentage is still less.

3. Is the limb after excision as useful as the one which nature, assisted by the surgeon's care, is capable of securing? In the large majority of cases, unquestionably no! The loss of the bone, even in one of the worst cases of disintegrated tissue, is seldom as great as in complete excision where the trochanter major is sacrificed. Even in suppurative cases, where there has been absolutely no operative interference, where the joint has been thoroughly fixed, and even although ankylosis has followed, the result is an excellent walking member, and the vertebral column (especially in a child) gives wonderfully compensatory movements. For the working man or woman a stiff joint is incomparably better than one in which the pelvis is insecurely steadied upon the femur, while extensive resection in early childhood may, by the removal of the epiphysis, so interfere with the growth of the member that the limb may be rendered almost useless as a functionating part of the body. The report of the London Clinical Society was decidedly of the opinion that the result was less useful, and I must confess that my results after excision have not been satisfactory, even when treated with care, with rigid antisepsis, and with subsequent attention to fixation of the joint for one or two years. A large majority of cases, six months after leaving the hospital, have been found to be suppurating. I speak of hospital cases, as, under proper care, operation is seldom necessitated in private practice.

It is sometimes argued that the most direful results obtained are those seen in the hands of the best hospital surgeons, which is undoubtedly true, from the fact that hospitals receive the very worst class of cases. Frequently the case when brought to the institution is already in the advanced stage of suppuration with involvement of both femur and innominate. Few dispensary out-patients can receive the close attention that is so essential to cure, and without it even ordinary measures will fail for want of attention to detail at the hands of ignorant mothers.

Yet, looking at hip disease in the light of present pathological knowledge as a local bone tuberculosis, the most rational method is to rid ourselves of the dangerous material if possible, before the general system becomes infected. Is it possible to do this? In the present state of our knowledge we must frankly answer we do not know. First, because we cannot be certain as to the exact number of foci that exist; and, secondly, we cannot fix the time at which general infection commences. We know that the most common point is near the epiphyseal line, but as to the rapidity of either local or systemic infection we have no certain knowledge.

The fact that pus has formed and has escaped from the capsule is sufficient cause for grave apprehension as to the result. But what course are we to pursue for its removal? While theoretically I am in favor of early operation, yet I am not prepared to advocate what is known as early excision. I abhor retained pus, and yet I have before my mind too many cases like the following:

A. B., aged eleven, female, with long, unmistakable signs of hip disease passing through its various stages; tumor appeared on the front of the thigh; by aspirations, in each of which operations seropurulent material was evacuated, and by the employment of rest and immobilization the symptoms became quiet, and the case was cured without appearance of pus, at least on the surface, and has been walking about in perfect health for eight years.

C. D., a case in which localized swelling was so great that I was called in consultation to open an abscesss. Undoubtedly hip disease in acute stage, yet, under proper treatment, after eighteen months shows no signs of suppuration, and bids fair to recover without loss of joint motion.

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Such cases cause one to hesitate when the symptoms are not very serious, and the surgeon, in all these doubtful cases, should go carefully over the whole ground, taking into consideration, in connection with the local symptoms, the surroundings of the patient, the general condition of health, and the ravages of the disease.

On the other hand, I can recall many cases which were making favorable progress, yet suppuration has suddenly appeared, and the patient has died from long-continued drain, or from lardaceous degeneration, or from tuberculosis. Others, where operation has been refused, have taken the same course. In cases where there are reasonable signs of pus formation, and yet where the existence of abscess is not positive, even though thickening and induration are markedly present, we can often afford to wait until the diagnosis is more thoroughly established, feeling confident that injury to the general health is no more likely to occur than after operation.

Incision, erasion, and drainage, as described in a later portion of this paper, sometimes offer better hope of relief than excision, on account of the thorough removal of all portions of the tuberculous material, both of hard and of soft parts; but I have not practised this plan of complete erasion for a sufficient time to speak emphatically in regard to its value, as it will require several hundred cases to yield reliable facts. In theory it is correct, and it has sometimes given me excellent results. I cannot boast of such apparently brilliant successes as have been reported by Barker (*British Medical Journal*, Dec. 15, 1888, p. 1336), yet a close examination reveals the fact that months later his cases showed evidence of continuation of the disease, even though prompt healing had taken place.

I look upon all pus confined in the body as an element of danger, and upon tuberculous material as especially fraught with risk. I do not overlook the fact that our very efforts at removal of this tuberculous material may be the means of causing bacillary infection, and that we may hasten general tuberculosis. Partial removal is dangerous. Neither do I overlook the fact that encapsulation, caseation, absorption, or organization of the tuberculous foci may occur; hence, we should always have good ground for interference before attempting operative relief. On the other hand, such foci may be a menace to the constitution for many years. The strongest argument against thorough removal and rigid extirpation of the diseased tissue is the fact that Volkmann, who followed this plan for many years, was disappointed in the results. After reëxamination of his cases he found that relapses were not uncommon. In this respect he seems to have had similar results to those secured by the rest of us.

The principal measures practised for the relief of the various stages of hip disease are:

I. Aspiration of the fluid in the joint.
II. Ignipuncture.
III. Trephining or drilling.
IV. Aspiration of abscesses more or less remote from the joint.
V. Incision of the abscess.
VI. Incision, erasion, and drainage.
VII. Excision.
VIII. Amputation.
IX. Osteotomy.

I. *Aspiration of the joint fluid.*—While thoroughly of the belief that the overwhelming majority of cases of chronic hip disease are evidences of tubercular ostitis, caused by slight injury, there are a certain number of instances of primary synovial inflammation that require treatment in order to prevent the degeneration from involving the bone structure and then becoming tuberculous. The surgeon who does not treat cases that are diagnosed as "contusion of the hip" with this possibility in view, is not only reprehensible for his carelessness but is committing an injury to his patient. The progress of a majority of these cases is hopeful. Distention of the joint by serum will necessarily produce flexion, abduction, and external rotation, and to employ traction in a straight line, without removal of the fluid, provokes muscular spasms and produces pain. If the removal of the fluid is contra-indicated or declined, traction and fixation in the line of the deformity are permissible. Should rest, or traction, or both, produce no relief within a few days, then, with a clean instrument, clean hands, and clean integument, no harm can result from aspiration. When there are evidences of increased thickening about the joint, indicating that the fluid has degenerated into pus, removal of the articular contents is advisable. The joint may be reached posteriorly or anteriorly. I prefer the former route, but am guided by the proximity of the swelling to the surface. The amount of fluid is limited unless the capsule is ruptured. Great benefit will ensue provided rest of the joint follows, and instructions are strictly followed for a long time after all apparent symptoms have passed away.

II. *Ignipuncture.*—This, as practised by Park, Bradford, and others, consists in electrical tunnelling of the bone or cautery by electricity. It is occasionally valuable and would often be of more service if we could be assured of the correct situation of the tuberculous focus. Uncertainty upon this point, however, will, for the present, at least, permit it to be only occasionally employed. The puncture is usually made over the trochanter, and the cautery is caused to enter the longitudinal axis of the neck of

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the bone until the epiphyseal juncture is reached. Good drainage is thereby secured. If all bacilli could be destroyed a rapid cure would result. It will require further tests before it is recognized as an established procedure.

The actual cautery may, I suspect, in the olden time, have sometimes been buried in the bone by Pott, Brodie, and others. This method, which we now so greatly decry, secured to the patient a long period of enforced rest from which benefit was derived, and thus the agent became a large factor in the cure.

III. *Trephining and drilling.*—From this plan of operation much benefit would doubtless be obtained, if, as in the last-mentioned plan, we could locate the exact position of the tuberculous focus. Unfortunately, however, this is usually impossible. Lovett states that much relief can be obtained by the evacuation of the products of inflammation by this method. He cut a ¼ inch hole through the neck of the femur with a trephine, and curetted and drained thoroughly from the bottom of the cavity. The temperature in his case ran up to 104.5°, but he states that cure was facilitated. It seems to me that cases requiring ignipuncture and trephining would be better treated by exploratory incision followed, if necessary, by drainage or by erasion.

IV. *Aspiration of the abscess.*—As long as there is the slightest doubt as to the existence of pus we can well afford to delay, even though confined pus is an element of danger. Many surgeons advocate the plan of letting these abscesses absolutely alone, and statistics prove that the danger to the constitution is not thereby greatly increased.

An important element in the diagnosis is the use of the aspirator. Thorough antisepsis must be employed, and it must be certain that no element of suppuration is introduced by the operator. A needle of large size should be employed, and if the fluid secured is sero-purulent in its character, or if we have the liquefaction of caseation, I have found that it is wiser to continue this plan of operative procedure as rapidly as the abscess becomes filled. In many cases absorption or organization has occurred, and the case has gone on to excellent cure without any pus finding its way to the surface. When the instrument reveals true pus one of the following plans of treatment must be instituted, unless the let-alone policy is decided upon. If it is decided simply to evacuate the pus without any more thorough operation, I decidedly prefer the preliminary plan of drawing it off through a large aspirator and injecting into the cavity ten or fifteen grains of iodoform dissolved in glycerin and distilled water. This should be allowed to remain, the object being to excite just sufficient inflammation to strengthen and thicken the walls of the abscess, which is nature's method of protecting the system from injurious invasion.

V. *Simple incision of abscess.*—When pus is absolutely proven to be present the question of its evacuation becomes an important one. So long as the doughiness of the part indicates only caseation, the waiting policy has, in my hands, given the best results. In the stage of liquefaction of caseation aspiration or simple incision is useful, as these cases often show but little tendency to suppuration. With many surgeons the existence of caseation is regarded as the signal for incision, but I have found that many of these cases do remarkably well without serious operation. As a rule, I prefer to abstain from any interference until I am positive as to my plan of final action, or until the consent of the patient has been secured to the necessary operative procedure. Should the major operation be declined, or if there are any contra-indicating symptoms, simple incision and drainage are most desirable, under strict antiseptic precautions. I have already described how preliminary aspiration should be performed in order to diminish the risk from bacillary infection. The incision should be made at the point of the tumor which will give the greatest drainage; frequently it is desirable to make two openings so that "through-and-through" drainage may be secured. In all cases of simple incision of abscesses, it is my chief object to avoid any pressure upon the abscess wall lest fissure occur and bacillary infection follow through this route. The contents of the abscess should never be pressed out, but should be removed by a gentle current of hot sublimate solution until the major portion of its contents has been evacuated. A bulky antiseptic dressing should be applied without undue pressure, and it should be allowed to remain until signs of decomposition appear, be it days or weeks. Disturbance of an abscess is as injurious as is the opening of a fresh wound. A drainage tube should be inserted at the time of the operation. Subsequently, antiseptic washing may be practised according to the view of the operator. So long as there is no pocketing of the pus I prefer to let it escape by free drainage rather than by forcible pressure.

VI. *Exploratory incision, erasion and drainage.*—There is no special form of incision which should be followed, even when it is probable that the operation will end in excision. If the abscess has not yet opened the most dependent portion of the prominence may be selected, avoiding the large vessels and nerves, and also paying attention to the integrity of the muscular fibres as far as possible. If sinuses exist, two or more of them may be connected, or the more prominent ones may be followed to the diseased bone. The bleeding vessels should be secured by forceps and irrigation by hot sublimate solution (1-1000) instituted so as to form a protective layer of coagulated albumin upon the freshly cut surface, thus assisting in the prevention of tuber-

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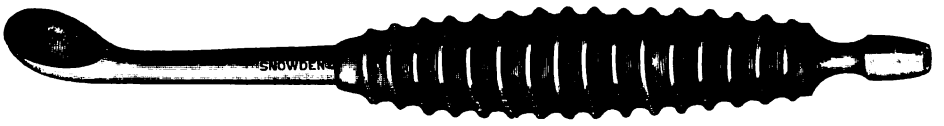
culous infection. Thorough exploration by the finger and probe will then disclose the origin of the pus. The joint will usually be found open; if so, no harm will arise from enlarging the wound sufficiently to admit the finger and thus determining whether the disease is limited to a small area. If the disease is localized the scoop is now brought into use and every particle of diseased tissue that can be reached either in the head or neck, or synovial membrane, or in the acetabulum, or in surrounding soft tissues, is cut away. For this purpose I prefer a hollow-handled sharp spoon, as it enables me to work more rapidly, and at the same time it supplies a constant current of antiseptic water, and thus destroys all germs before they have an opportunity to infect the incision. As shown in the cut, it is simply a sharp spoon, with a bulky handle tunnelled longitudinally with a large ($\frac{3}{16}$ inch) bore so as to allow free ingress of water from the feeding tube which is connected with a reservoir, or jar, or rubber bag. The device of Barker for shutting off the flow of water is entirely unnecessary and is cleansed with difficulty. The carpal portion of the operator's hand makes an efficient valve and is easily employed for the arrest of the current when necessary. The length of the tube and the height of the jar, or fountain syringe, must be varied according to the rapidity of the flow desired. This hollow instrument gives the operator control of the current and leaves him free from the presence of an assistant's hand.



The erasion must be carried well beyond the seat of the disease, and for this purpose a curved gouge is sometimes necessary. If the head or other portion of the bone is loose, the rough ends must be sawed or gnawed off by strong rongeurs, and all fresh foci discovered in the bone similarly treated. The knife and scissors are then brought into use and all possible fragments of the diseased tissue entirely cut away. All sinuses should be opened, if possible, and the entire walls together with that of all abscess cavities, should be removed until healthy tissues are reached. After rendering the wound thoroughly aseptic we may permit it to fill with fresh blood-clot for reorganization or dress it clean and dry. The wound can be drained with catgut or rubber tubing, according as is deemed best by the operator. In the majority of cases I regard it as far more important to effect a thorough cure than to secure primary union. Rubber drainage is, therefore, preferable, especially when there has been extensive bone disease, as it counteracts any error that is liable to occur even with the most careful antisepsis. If these tubes are withdrawn half an inch at every dressing it will accelerate the healing and will lead the pus down their track. They are usually retained too long. A large antiseptic dressing should be immediately applied, firm pressure being made over antiseptic wool.

In the discussion upon this method, which developed in the Royal Medical and Chirurgical Society (*British Medical Journal*, December 15, 1888), absolute antisepsis, subsequent attention, and absolute rest were insisted upon. The anterior incision of Hueter for erasion was recommended, although thorough removal and drainage were more difficult. Wright, who has excised 135 times in his last 800 cases, thought it impossible to remove all the diseased tissue, and as a single focus remaining might, on slight traumatism, arouse inflammation and bring on a relapse, he still believed in drainage rather than to attempt primary closure. It is certainly impossible to secure a clean, fresh wound in every portion where there has been a large amount of disease and extensive suppuration.

The temperature chart is the most valuable index of the accumulation of pus, and every rise of temperature should be followed by a careful examination of the region.

VII. *Excision.*[1]—When an exploratory incision reveals a large portion of diseased bone, and when it is impossible to remove the foci by erasion, then excision should be performed. Enough has been said, in an earlier portion of this paper, to show that excision should not become a routine practice even in bad cases of hip disease, as has been the custom with many surgeons in late years.

Excision is an operation of exceedingly great value in selected cases, but it should be performed only with the full consideration of all the surroundings of the individual case. As to early excision, reasons for its avoidance have already been given. As to the line of incision, we may be governed by the location of the sinuses, but should be controlled more by the avoidance of the muscular and nerve fibres than by any fixed line, although I prefer the curved incision passing behind the great trochanter from the posterior iliac spine. If the anterior incision is preferred, it may be commenced just below the anterior superior spinous process with the tensor vaginæ femoris and gluteus on the outside, the sar-

[1] Dr. Willard said that as the question of excision would be discussed by another member of the Association, he would not enter into details regarding it.—ED.

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torius and rectus on the inside, cutting directly downward upon the front of the capsule.

It is well to save all healthy periosteum, but this membrane when diseased should be thoroughly removed, as should any other disintegrated tissue. While excision should be thorough, it is not necessary that the trochanter, when healthy, should be sacrificed merely for the sake of drainage, as we can secure drainage by carrying a tube directly backward through the buttock, or in any convenient direction. Retention of the trochanter will add greatly to the future usefulness of the limb as well as to its length, as a short, slightly movable band of union is most useful. A narrow saw with a stout handle, similar to that of the Adams saw, with a longer cutting-blade, is usually much more convenient than a chain-saw. The soft parts can be protected from injury by retractors. For very deep work, where the ordinary chain-saw is certain to break during the operation, I have had a chain-saw made of the size and weight of an ordinary écraseur. This is much better fitted for heavy work, but is not equal to the straight saw for superficial work.

When osteomyelitis is present in the head and shaft of the femur, care should be taken not to strip the periosteum from a larger area of the bone than is necessary in removal. When the disease has extended far down the shaft of the femur the foci can be removed by erasion, especially in cases where to clear away all the disease would necessitate the removal of three or four inches. The result of entire removal in such a case would be to leave a "flail" limb, and amputation would be preferable save for appearance. It is also best in these cases to perform erasion if a secondary operation becomes necessary.

The dressing after excision which I find most convenient and comfortable, is simply light extension by adhesive strips and cord passing over a pulley, with heavy sand-bags applied to either side of the body from the axillæ to the feet. A wire cuirass is convenient and useful in cases where early transportation is required. The patient rarely suffers much pain.

In excision, as in erasion, all diseased tissues should be cut away, and the acetabulum cleaned as freely as possible, the gouge and scoop being brought into use. Drainage should be thorough and complete, but the tube should not be retained longer than is necessary to form a track for any deleterious material that may remain in the wound. Thorough antisepsis promotes rapid healing, but in excision, as in erasion, any remaining diseased foci will cause subsequent abscess.

When indications of commencing waxy changes make their appearance excision is certainly desirable in order to check the drain upon the constitution. Sometimes, even when these changes are marked, although the immediate risks from the operation are great, yet life has been prolonged by removal of the diseased foci. I have recently seen a case where excision had been performed several years since, yet where suppuration had continued and gouging had been practised three times upon the patient with a continuance of the suppuration after each operation. The kidneys, liver, and spleen showed most extensive changes, and yet the patient rapidly improved, gained flesh and strength, and was nearly freed from the discharge of pus from at least a dozen sinuses by a three months' residence at the seashore. This case evidences the effect which the bodily condition has upon the inroads of disease when the system is placed under good resistive influences, and well illustrates the fact that the tubercle bacillus can be destroyed by the individual.

By rapidity of operation, incision of moderate length, sawing the bone with a narrow saw while in position and without much disturbance of the parts, by prompt arrest of hæmorrhage by the use of hæmostatic forceps, and by extra care in all the details of the operation, the shock is greatly lessened and the seriousness of these operations has been greatly diminished in recent years. The condition of the patient has also been greatly benefited by the lessened drain upon the system through antisepsis, and he is thus made better able to cope with the tendency to relapse.

The necessity for excision, as for erasion, is greatly diminished by proper attention to rest and fixation. After the operation the weight of the body should not be put upon the bone for many months, and the diseased region should be thoroughly protected from injury by some form of apparatus for at least a year after entire recovery has taken place.

Frequently, when an exploratory incision has been made with the idea of removing the diseased portion by erasion, excision will be the final result of the operation. It is not expected that erasion can take the place of excision. It is simply to be employed where the destruction of the bone tissue has been small.

VIII. *Amputation.*—While amputation has been very serviceable in joints other than the hip, yet at this articulation, although sometimes employed, it is rarely of service, since cases necessitating so serious a loss of tissue are usually accompanied by caries of the ilium and the removal of the limb would be of only slight service save in arresting the drain. It has, however, been occasionally performed, and when osteomyelitis involving a large portion of the head of the femur is present, it would be decidedly preferable. Since Ferguson's advocacy of excision, in 1850, amputation has decidedly (and very properly) fallen into disuse, as the more conservative operation is usually of great benefit and is less

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fatal. As excisions have lessened the number of amputations, so erasion will, in the future, lessen the number of excisions.

IX. *Osteotomy.*—Osteotomy is an operation to be performed only after the subsidence of all active inflammatory symptoms, and need not, therefore, be discussed in this paper.

CONCLUSIONS.—I. Mechanical measures, which enforce strict and long-continued rest of the joint, are the best preventives of operative procedures, and when they can be employed, as in private practice, operation is seldom necessary, since even if caseation or liquefaction occurs, we may often have absorption or encapsulation. Give careful attention to hygiene and general health.

II. Antiseptic aspiration of the joint is desirable if it is distended with serum, sometimes when it is filled with pus.

III. Ignipuncture and trephining give great relief, provided the focus of the disease is reached.

IV. If in doubt as to the presence of pus, wait, or test with aspirator. Repeat the aspiration if the fluid drawn is sero-purulent, since organization may occur without the opening of a sinus. If there are no signs of caseation, wait. If caseation takes place, make early exploratory incision. These latter cases are often curable by simple incision and drainage.

V. When certain that true pus has formed, aspirate and inject with iodoform in order to strengthen the walls of the abscess cavity as a preliminary to incision, provided incision alone is decided upon.

VI. If the abscess is to be only opened and no other operation performed, as soon as the sac refills after aspiration incise freely, wash out the contents with a slow current of (1-1000) hot sublimate solution, but on no account apply pressure to expel the pus, lest fissures be made in the limiting wall and infection be thus favored. Drain freely. Dress antiseptically and fix the hip. Continue to keep it at rest until closure occurs, or until further steps are necessary.

VII. When extirpation has been decided upon make an exploratory incision either along the line of a sinus or directly upon the bone, anteriorly or posteriorly, as preferred, and thoroughly examine the joint. If the destruction of tissue is small, try erasion and remove the carious bone and soft tissues with scoop, scissors, and knife. Endeavor to remove every particle of tuberculous tissue of both hard and soft parts including the abscess wall. Irrigate thoroughly with a strong antiseptic to prevent bacillary infection of the freshly cut tissue and drain freely. With antisepsis the dangers of opening the joint are only slight, and the desirability of operation is now based largely upon the question of time and the ultimate results as regards usefulness of the limb. In children it is especially desirable.

VIII. Perform a formal excision, not as a routine practice, but when the disease is found to be too extensive to be removed in any other way. In adults, especially when poor, a typical resection gives the best results. In cases of great destruction of bone, in painful caries sicca, in profusely suppurating cases, in the early stage of commencing waxy changes, the operation becomes one of special value.

Erasion differs from excision chiefly in the fact that in the former operation all diseased tissues (soft and hard) are removed and all healthy ones are spared. It is also less mutilatory. In excision a considerable portion of the good bone is sacrificed, but erasion is, of course, not as beneficial at the hip-joint as at the knee.

1818 CHESTNUT STREET.

CLINICAL MEMORANDA.

TOXICOLOGICAL.

Hallucinations from Atropine Instillations in the Eye.—Some time since, J. B., a man of about twenty-five years, presented himself at the Presbyterian Eye and Ear Hospital, Baltimore, for treatment of a central corneal opacity of the left eye which greatly obstructed vision. An iridectomy was thought advisable, and was performed on Friday afternoon. Being the resident physician of the institution at the time, I had charge of the patient, and instilled one drop of atropine solution (4 grains to 1 ounce) in the eye three times daily. On the following Sunday, after the seventh instillation during a period of about forty-eight hours, he acted and talked strangely to the inmates of the hospital. On making my rounds that evening I found him somewhat excited. He gave foolish replies to questions, his face was flushed, pulse rapid, and the pupil of right eye was widely dilated. I discontinued the use of atropine, but did not deem an antidote necessary. About one o'clock that night, however, I was aroused by the nurse, who said she thought the man was crazy. Upon going to his room I found him dressed in overcoat, boots and hat, and crying like a child. He said that he had just seen a man split his father's head open with a broad-axe. I told him he was mistaken, and induced him to retire. After ⅙ grain of morphine, he quieted down and slept until morning. He was somewhat "flighty" during that day, but afterward was rational. Such effects are not uncommon when the atropine is instilled at intervals of an hour or two, but are extremely rare when it is used only three times during the twenty-four hours.

E. OLIVER BELT, M.D.

WASHINGTON, D. C.

GYNECOLOGICAL.

A Case of Hæmatoma of the Cervix Uteri.—Dr. J. P. Salb was recently called in consultation to see a woman, twenty-four years old, who was in labor with her second child. On examination, the doctor found a wine-colored, flattish, ragged tumor projecting five inches beyond the vulva. It was irregular, resistant, apparently torn, and bled quite freely, and resembled a placenta. The child

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was presenting by the face, the chin being rotated backward. Forceps were applied, and the child delivered. After the delivery of the placenta it was found that the finger could not be passed between the tumor and the internal surface of the uterus, and that the growth was continuous with the neck of the uterus.

The following day I saw the case in consultation. The tumor was then of large size, resistant, very dark, and apparently threatened with gangrene, and causing one of the most sickening odors I ever came across. The ragged ends apparently belonged to the posterior lip of the cervix, and just above them there seemed to be a rounded opening which had the appearance of a greatly enlarged os uteri.

I concluded that the tumor was either a sarcoma or hæmatoma, probably the latter, on account of the history of the case. She was a young woman, she had been in good health up to the labor, and had had no previous discharge, pain on intercourse, or other symptom of disease. The tumor was first noticed after the labor had been in progress for several hours, and was probably caused by the faulty position of the child.

As the posterior part of the neck was evidently already amputated, we concluded to complete the operation by amputating the anterior part of the cervix. The tumor was becoming gangrenous, it bled freely, and there seemed to be no other way of checking the hæmorrhage. Accordingly the woman was placed on a table in the lithotomy position, with an oil-cloth to drain off the liquids, and, the limbs being supported by assistants, the tumor was drawn out of the vulva as far as possible. The vagina was then thoroughly irrigated with hot carbolized water, by means of a fountain syringe. A stout double ligature was drawn through the tumor just above the dark part, and each portion tied separately. Another ligature was then thrown around the growth and tied very tightly. The mass was then cut off with scissors curved on the flat. The posterior part of the cervix could now be very plainly seen. It was ragged, dark, and slightly swollen. It did not bleed, and we concluded to let it remain. The vagina was again well washed. The woman was given a dose of morphine and put to bed. We did not give her an anæsthetic, and she did not suffer much pain during the operation. Vaginal irrigations were used daily.

The patient made an uninterrupted recovery without an untoward symptom. The sloughing stump came away about a week after the operation.

The accident seems to be a rare one, judging from the literature at my command. I am convinced that the hæmatoma was caused by the faulty presentation, the head pressing for hours against an undilatable os uteri, and at last bursting through the obstruction, the greatest pressure being on the posterior part of the cervix.

E. J. KEMPF, M.D.

JASPER, IND.

MEDICAL PROGRESS.

The Treatment of Burns.—In the *Norwiny Lekarskie*, No. 9, 1889, DR. LEON SZUMAN describes his method of treating burns as follows: as soon as possible after the injury the burned surface is covered with the following ointment:

℞.—Vaseline . . . 7½ drachms.
Pulverized salicylic acid. 15 to 30 grains.
Cocaine hydrochlorate . 2 to 4 " —M.

Over this he places a thick layer of iodoform or salicylic gauze, a thin layer of salicylic cotton, and a bandage. In burns around the mouth where the dressings become soiled they may be changed several times a day if necessary, while on the limbs or other regions they may be left undisturbed for several days. If the injured surface is contaminated with sand, mud, etc., it is washed with Carron oil before applying the ointment. The oil may also be used to soak the dressing if pain is severe. On changing the dressing if any portion of the gauze is found adherent to the surface it should be left *in situ*. Under this treatment severe and extensive burns are said to heal rapidly and without suppuration.—*Provincial Medical Journal*, March 1, 1890.

Prescription for Chapped Hands.—The following prescription for chapped hands is quoted in the *Provincial Medical Journal*:

℞.—Menthol . . . . 15 grains.
Salol, Olive oil } of each . . ½ drachm.
Lanolin . . . . 1½ ounce.—M.

The pain is said to be alleviated after the first application of this ointment, the skin at the same time becoming soft and fissures healing rapidly.

Calcium Iodate as an Antiseptic.—MR. W. DINNETT SPANTON has been experimenting for some years with iodate of calcium and believes that the salt possesses powerful antiseptic properties (*Provincial Medical Journal*, March 1, 1890). A bottle of urine, to which was added a small quantity of the iodate, has been standing for seventeen years and shows no traces of putridity. Another bottle containing boiled meat is also free from odor, excepting that of iodine.

Mr. Spanton has employed it internally and in solution for washing out the bladder in several cases of cystitis with very offensive urine. It had the result of greatly diminishing the fœtor and clearing the urine, though the author considers it inferior to boric acid for this purpose.

As a dressing for wounds, either recent or suppurating, it is certainly useful as an antiseptic. In such cases its insolubility is the greatest disadvantage, as it requires 400 parts of water to dissolve. In a case of excision of the tongue a solution of the iodate made an excellent mouth wash, absolutely preventing the fœtor so common after such operations.

Given internally the author has noticed no effects other than checking the decomposition of the urine in cystitis and reducing the amount of urates. So far as his experience goes he has found the insolubility of the salt its greatest disadvantage, but its innocuous and unirritating properties and its marked effect on the urine render it useful in cystitis, nephritic abscess, and to disinfect the urine previous to operations on the kidney or bladder.

It is important that the iodide of calcium be not mistaken for the iodate. The former is poisonous, and in comparatively small doses will produce disagreeable

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effects. Unfortunately, the author does not state in his paper the exact amount of the iodate used internally in any of his cases.

The Treatment of Asthma.—At the beginning of an attack of asthma, Dieulafoy directs the patient to paint the nasal cavities as high as possible, by means of a camel's-hair brush dipped in a five per cent. solution of cocaine hydrochlorate. If preferred, the solution may be sprayed into the nose and throat. If this application does not cause the attack to abort, the patient should be made to inhale from 1 to 12 drops of pyrodin, sprinkled on a handkerchief. When the attack is at its acme, inject hypodermically $\frac{1}{10}$ grain of hydrochlorate of cocaine, and repeat in a quarter of an hour, if necessary. The remedy *par excellence* for asthma is iodide of potassium, given in doses of 20 to 30 grains daily, but commencing with 5 grains only, and gradually increasing. To combat the diathesis, the author considers three principal medicaments: iodide of potassium, belladonna, and arsenic, and recommends the following course of treatment: The patient to take from 15 to 30 grains of iodide daily for fifteen days, then replace the iodide by pills containing powdered belladonna leaves and extract of belladonna, of each 4 grains, to be made into 20 pills. At the same time he is to take a teaspoonful daily of the following solution, after the principal meal:

℞.—Arseniate of sodium . . . 1 grain.
Distilled water . . . . 2½ fl. ounces.

If the chest be emphysematous, the use of baths of compressed air are also useful concurrently with the foregoing treatment.—*London Medical Recorder*, February 20, 1890.

The Treatment of Prolapse of the Rectum.—Mr. Frederick Treves summarizes the various methods employed for the treatment of prolapse of the rectum, as follows:

1. Subcutaneous injections into the ischio-rectal fossa. The fluids employed consist of solutions of ergotin, nux vomica, or carbolic acid. Vidal claims three cases of cure by the use of ergotin. In one of these no less than twenty-two injections were employed. The procedure would appear to be followed by severe pain and spasms of the sphincter, and to be uncertain in its results and tedious in its employment. It can scarcely be considered to be founded upon sound scientific principles, or to be a measure devoid of reasonable risk. At least one fatal case of poisoning is reported to have followed the injection of nux vomica.

2. The application of nitric acid. This measure aims at promoting cure by producing such a cicatrix as will cause the complete contraction of the mucous membrane. It seeks also to promote adhesion between the coats of the disorganized bowel. The method may be spoken of as little less than barbarous, and as representing a survival of an evil period in the surgery of the past. The operation involves extreme pain, and is apt to produce extensive sloughing and severe inflammation of the rectum. It has been followed by fatal hæmorrhage, and by stricture of the lower part of the bowel. The after-treatment is not infrequently protracted. Mr. Harrison Cripps mentions a case in which apparent cure followed three applications of nitric acid, the period of treatment extending over four months.

3. The application of the actual cautery to the mucous membrane of the prolapse, or the removal of linear folds of the membrane by means of the clamp and cautery, are measures which are little superior to that just described. The treatment is painful, a severe degree of inflammation is excited, sloughing is inevitable, the special dangers of a burn are introduced, and more or less cicatrization is unavoidable. During the use of the clamp and cautery the weakened bowel has given way, and coils of small intestine have escaped.

Of all these methods it may be said that they are clumsy, uncouth, uncertain, and unsafe; that they are not in accord with the teachings of modern surgery; that they offer the least satisfactory mode of dealing with the affection, involve a protracted and painful period of treatment, and incur unnecessary risks. By excising the part a clean incision is substituted for a burnt and gangrenous surface, the operation area is reduced to a minimum, no damaged bowel is left in the pelvis, hæmorrhage may be rendered practically impossible, and the risk of a subsequent stricture can hardly be said to exist. The method is simple and final, it involves no protracted period of after-treatment, it induces but little pain, it leaves a simple wound which is open to inspection, and it appears to offer the best claims for being considered a method of "radical cure." Kleberg's method of removing a prolapse by means of elastic ligatures, aided by the liberal application of chloride of zinc, is a needlessly severe, complicated, and dangerous operation, which does not appear to have been adopted by any other than the inventor. It would seem that in three cases treated by this method two patients made a tardy recovery, and one died.—*Lancet*, March 1, 1890.

Prescription for Gonorrhœa.—Jullien recommends the following injection in gonorrhœa:

℞.—Liquid vaseline . . . 140 parts.
Bismuth subnitrate . . . 10 "
Resorcin . . . . . 3 "
Iodol . . . . . 1 part.—M.
—*Revue de Thérapeutique*, March 15, 1890.

Cardiac Affections of the Menopause.—Professor Kisch (*Berliner klinische Wochenschrift*) has noticed that in the beginning of the climacteric, when menstruation is becoming irregular, although the heart has hitherto been normal, women often complain of attacks of palpitation with or without apparent cause, lasting some minutes, and recurring after several days. The feeling of increased heart-beat is very troublesome, and is accompanied by a sense of anxiety and of pressure in the chest, throbbing of the carotids, pulsation of the abdominal aorta, with rushing of blood to the head, occasional muscæ volitantes, noises in the ears, giddiness, and even fainting. Objectively, the cardiac action is found to be increased, with frequency of the pulse from 120 to 150, which is usually strong, well filled, and regular. The heart-sounds are normal. There is no appearance of anæmia; on the contrary, the patient looks well nourished, strong, and full-blooded. The systematic use of mild purgatives is indicated, with dietetic treatment in the shape of bland

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food, while much improvement may result from active bodily movement, cold bathing, and moist applications to the abdomen. Another form of heart trouble associated with the change of life has the symptoms of cardiac weakness. It occurs usually in delicate women, who have suffered from chlorosis in youth, and from anæmia later on; or in cases where the climacteric sets in with profuse menorrhagia, or in women who have formerly suffered much from menorrhagia or have borne many children. In these cases the frequency of the pulse is not so high as in other forms, though the pulse is weak, small, easily compressible, and sometimes intermittent or irregular. Dyspnœa and attacks of cardiac asthma occur, sometimes with angina. Congestive appearances may be present, such as sudden chilling of hands and feet, often with œdema of the ankles; and sometimes there is albumin in the urine. It is very important in these cases to ascertain the condition of the pelvic organs. A third group arises from the tendency of fat to find its way into the heart as part of a general deposit throughout the body.—*Practitioner*, March, 1890.

The Treatment of Phthisis by Carbonic Acid.—It is said that lime-burners enjoy a certain degree of immunity from phthisis, not because they take in more carbonic acid, but because its diffusion when expired is impeded. Again, the course of phthisis is often seen to be arrested in pregnancy, and this has been ascribed to the increased amount of carbonic acid in the maternal blood. Chronic heart disease, by causing chronic hyperæmia of the lungs, also affords a kind of immunity against phthisis; lastly, in emphysema there is also permanent dyspnœa in more or less degree, and the blood is overcharged with carbonic acid. Acting on these ideas, DR. HUGO WEBER (*Berliner klinische Wochenschrift*) proposes to administer carbonic acid by the stomach, in the form of effervescing powders. Ten cases are reported in which decided improvement was noted after this treatment, which certainly merits further trial, especially as it can be carried out at the patients' own homes. According to Ebstein's theory of diabetes, the increased proneness to phthisis which that disease entails is due to the defective development of carbonic acid, this being not only the final product of tissue oxidation, but a body which exerts a regulatory restraining influence on the destruction of glycogen and albuminoids. Bergeon, Dujardin-Beaumetz, and others have used in phthisis gaseous injections *per rectum* of hydrofluoric acid, copiously diluted with carbonic acid, and the good results they met with are claimed by Dr. Weber as due to the diluent. —*British Medical Journal*, March 8, 1890.

Medical Examinations for Life Insurance.—In the *Dublin Journal of Medical Science*, March, 1890, DR. A. W. FOOT contributes an article of great interest to examiners for insurance companies. Referring to the influence of apoplexy upon risks, the author writes that the apoplectic habit, in so far as it is characterized by broad chest and shoulders and a reddish face, is found absent in a majority of those who suffer from cerebral hæmorrhage, and he apparently thinks that these signs should not be taken into consideration; but it is important to bear in mind that apoplexy, or at least the tendency to arterial degeneration, is often inherited.

There is seldom any attention paid to the existence of a discharge from the external ear, yet such a symptom betokens incalculable dangers to life, and it is suggested that the applicant should invariably be questioned upon this point.

Erysipelas is also frequently neglected, yet it is well known that the disease is often associated with diminished vitality, with depraved digestion, and with defective assimilation, and that one attack predisposes to others.

Another matter which should not be overlooked, is the occurrence of fæcal obstruction, especially if originating near the right iliac fossa. The applicant, deeming it simple constipation, may not consider it worth mentioning; but such cases are liable to a recurrence of obstruction which may prove fatal.

With reference to phthisis the author insists on the importance of not overlooking the fact that, when many brothers or sisters of the applicant have died in infancy from diseases of the brain or of the abdominal organs, tuberculosis is probable, and the risk thereby increased. Further, it is a sound principle of action to reject a life when so many as two immediate relatives are admitted to have died of consumption. Applicants often try to cover up the existence of the disease by terming it "asthma," or "bronchitis," when careful inquiry will elicit the fact that the disease was undoubtedly phthisis. The examiner must also be on the watch for inherited tendencies to insanity, which in the family history are described as "nervous debility," "congestion of the brain," etc.

Many cases have occurred in which insurance companies have lost money, after a short period of insurance, by the examiner neglecting to investigate the rectum. Cancer of this organ in the early stages may be considered hæmorrhoids by the applicant.

The author then reviews the question of the influence of albuminuria on the risk, and concludes that, however small the quantity, unless clearly extra-renal, albumin in the urine should positively exclude an applicant from insurance.

While examining the urine, it should in all cases be tested for sugar regardless of the specific gravity. It is only by routine examination that the early stage of diabetes can be discovered, for at that time the amount of sugar is insufficient to raise the specific gravity to a marked degree.

Iodoform in Cerebro-spinal Meningitis.—DR. G. LEVITSKY in the *Vratch* has recently called attention to the excellent effects obtained in cerebro-spinal meningitis by the internal administration of iodoform, in doses of two grains three times daily. He reports the case of a woman suffering with an exceedingly severe form of the disease, in whom, after other means had failed, the administration of iodoform was immediately followed by steady improvement. On the third and fifth days of the treatment contractures disappeared from the right and left arm. By the end of the fourth week the patient was practically well, and the drug was discontinued. A relapse then occurred which yielded at once to iodoform, a complete and permanent recovery taking place. In all, one ounce of iodoform had been taken in the course of two months; no untoward effects of any kind being noticed.—*Journal of Nervous and Mental Diseases*, March, 1890.

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THE PREVENTION OF OPHTHALMIA NEONATORUM.

THE statistics of Professor Magnus, of Breslau, carefully compiled for Europe, and Germany in particular, have demonstrated that 71.99 per cent. of all who become blind during the first year of life are rendered sightless by purulent ophthalmia; in other words, he has shown that of every 10,000 children under five years of age, 428 are blinded by this type of conjunctivitis. The proportion of blind from this cause in the asylums of Switzerland is 26 per cent.; in Austria, Hungary, and Italy, 20 per cent.; in Spain and Belgium, about 12 per cent.; and in the United Kingdom, 30 per cent. of the inmates of institutions, and 7000 persons have lost their sight from the same disease. These facts are recorded in the Report of the Royal Commission of the Blind, and are in accord with the abstract published in the *Lancet* of last year. The subject cannot be presented more forcibly than has been done by Rivière of Bordeaux, who says that purulent ophthalmia alone is responsible for nearly one-third of the cases of blindness, and has placed in the care of Europe well-nigh 100,000 victims. In our own country, according to the statistics of Howe, in spite of the improved methods of modern medicine, blindness is on the increase. Perhaps one of the most potent factors of this increase is ignorance on the part of the emigrant population, and the suggestion of the Royal Commission that at the time of the registration of the birth of a child a paper containing an account of the dangers of the disease and the best simple means of treatment be handed to the parents, deserves consideration. The plain duty of physicians demands the practice of that means of prevention which careful experience has taught to be effective.

To Crédé belongs the credit of having secured, by the use of nitrate of silver, a rational method of preventative treatment, although before his time Bischoff employed in his service at Basle vaginal injections, and bathed the eyes of the newborn with lotions of salicylic acid; and in 1876 Schies used instillations of carbolic acid. In 1881 Olshausen proposed to substitute for nitrate of silver a carbolic acid solution of the strength of 1 per cent. A year later de Wecker recommended bathing the eyes of the newly born with a lotion of boric acid, 4 to 100, or carbolic acid, 2 to 100. In the Obstetrical Clinic in Berlin, in 1883, nitrate of silver was replaced by instillations of corrosive sublimate, 1 to 1000, and the same practice was employed in the Maternity Hospital of Breslau. At the Congress of German Doctors held at Munich in 1886, Kaltenbach advocated vaginal douches of corrosive sublimate, and washing the eyes with distilled water; with this procedure he was able to conduct 200 labors without a single case of ophthalmia. Cohn and Hegar-Kohrn, by the employment of simple measures and scrupulous cleanliness, obtained good results in the Maternity Hospital in Dresden, namely, among 1000 children 7 cases of purulent ophthalmia, and 15 of slight conjunctivitis (*Archiv für Gynäkologie*, 1888). Puech (*Archiv de Tocologie des Maladies des Femmes et des Enfants Nouveau-nés*, Février, 1890) records the methods to which he has had recourse in the Obstetrical Clinic of Montpellier. His paper is of considerable interest because it affords an opportunity of comparing the value of the method of Crédé with that described and advocated by Hegar-Kohrn. Both of these methods were employed in the service to which allusion has just been made, and comparisons instituted. The method of Crédé, as is well known, consists in the instillation of two drops of a 2 per cent. solution of nitrate of silver in the eyes of the newly born child, which, as soon as it is expelled from the maternal passages, and before the cord is cut, is placed upon its back in the bed, the eyelids parted, and the drug introduced. This, in some

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instances, has been repeated on the second day, in the meantime small compresses soaked in a solution of salicylic acid having been laid upon the closed lids.

The method of Hegar-Kohrn is conducted in the following manner: A convenient vessel contains small pledgets of antiseptic, absorbent cotton, moistened with Van Swieten's solution (corrosive sublimate 1 part, alcohol 100 parts, water 900 parts). This receptacle is placed within reach of the accoucheur, who supports the perineum with one hand, the other remaining free to take up the moistened pledgets. As soon as the head of the child is born, the closed eyelids are carefully dried with two or three portions of the prepared cotton. When the child is entirely expelled it is placed upon its back, and before the cord is tied the eyelids and all of the tissue surrounding them, especially the angles of the eye, the root of the nose, and the eyebrows, are carefully cleansed with the same solution until an absolutely aseptic surface is obtained. During this whole procedure care is taken that the child does not put its hand to its eyes before they have been cleansed in the bath which is prepared for the infant. This manœuvre, as Puech declares, requires a longer time for description than it does for its performance, and is always ended before the time has arrived to cut the cord.

Three series of observations constitute the basis for his communication. In the first, among fifty children treated alternately by the method of Crédé and by that of Hegar-Kohrn, two cases of ophthalmia appeared. The cause of the two cases, however, is explained away and the blame should not be attached to any imperfection in the preventive treatment. In the second, among twenty-six children treated by the method of Hegar-Kohrn, not a single case of ophthalmia arose; and in the third, nine children subjected to the method of Crédé escaped ophthalmia.

The efficacy of the method of Crédé admits of no controversy, and even those, like Kaltenbach, who have suggested other forms of prevention, admit without reserve that nitrate of silver properly applied meets with invariable success. Not infrequently it has been urged against the employment of this drug that its action is irritating, and that occasionally it is followed by a sharp conjunctivitis requiring the use of cold compresses, and one or two cases of really serious inflammation are on record, notably the remarkable instance recorded by Pomeroy some years ago, in which a well-nigh fatal hæmorrhage followed the instillation of a few drops of a 2 per cent. solution of nitrate of silver. The occasional accidents following the use of Crédé's method are so insignificant as compared with its favorable action, by which its author was able to reduce a percentage of 10.07 cases of ophthalmia to 0.1, a result which has been equalled and even exceeded by a number of careful obstetricians including the names of Koenigstein, Braun, Leopold, Garrigues, and Rivière, that they scarcely merit objection. At the same time if another method equally efficacious is presented for consideration, and one unobjectionable as far as any irritating properties of the application are concerned, it is certainly worthy of trial. Hegar-Kohrn has devised a method of this character, and Puech, by comparing it with the Crédé application, has come to the conclusion of its undoubted efficacy.

Purulent ophthalmia is caused by a contagium contained in the utero-vaginal secretions of the mother, and the very frequency of these secretions, whose absence, indeed, in the pregnant woman is the exception, demands on the part of the doctor invariable recourse to a preventive treatment of ophthalmia neonatorum. He knows that with Crédé's method he is safe, provided its application is properly and conscientiously performed. If desirous of avoiding any chance of irritation from the nitrate of silver application, or of adopting some other method, like that of Hegar-Kohrn, the final conclusion of Puech's paper, based, as it is, on a conscientious study of the literature, as well as practical experience in the maternity wards, offers a safe guide: "We believe the method of Crédé is still the chosen method, but the incontestable value of that of Hegar-Kohrn seems to us to be proven. We do not doubt that it will render real service. While the method of Crédé is applicable to maternity hospitals, or in the course of grave epidemics of ophthalmia, the method of Hegar-Kohrn will be that to which we can turn in private practice, where the chances of contagion are less imminent."

THE LOUISVILLE CATASTROPHE.

IN another column under the head of Special Telegraphic Correspondence, we publish a despatch from our correspondent in Louisville, detailing the medical aspects of the city after the storm. As will be seen from this account, the health of Louisville is at present fairly good, but it is worthy of note that the danger from epidemic and acute ill-

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nesses exists rather in the future than in the present. This was the case at Johnstown, where, for many days after the flood, the health of the survivors and workmen was unusually good, the real evidences of illness only asserting themselves after order was somewhat restored. The most serious cause for alarm at Louisville is the destruction of the water works and the consequent water famine.

REVIEWS.

THE STUDENT'S SURGERY. A MULTUM IN PARVO. By FREDERICK JAMES GANT, F.R.C.S. 12mo., pp. 817. Philadelphia: Lea Brothers & Co., 1890.

IN these days of compends and condensed medical literature it is refreshing to open a volume written for students, yet readable, and not divested of everything but the bald facts required to pass a successful examination.

The *Student's Surgery*, though condensed from Mr. Gant's well-known and elaborate *Science and Practice of Surgery*, is, excluding the various specialties, a fairly complete and excellent text-book on surgical practice. It is essentially practical; pathology and theories being briefly reviewed, diagnosis and treatment being fully discussed.

The author has omitted, and wisely we think, all consideration of the surgery of the eye, ear, teeth, skin, and female genital organs, and also orthopædic surgery; subjects which could only have been introduced in outline, and with the sacrifice of more important matter. It is doubtful if, at the present day, these departments should have a place in any text-book on surgery.

The faults of the book are chiefly those of omission. For instance, in the pathology of erysipelas, carbuncle, and tetanus, no mention is made of microörganisms as possible causative agents: a serious oversight in the present state of our knowledge.

The absence of an index is also to be regretted, though the table of contents is so thorough that an index is not an absolute necessity.

The illustrations, though not numerous, are good, and the appearance of the book is all that could be desired.

MASSAGE AND THE ORIGINAL SWEDISH MOVEMENTS. By KURRE W. OSTROM. Illustrated, 12mo., pp. 97. Philadelphia: P. Blakiston, Son & Co., 1890.

IT cannot be denied that massage occupies an important position in the therapeutics of many diseases; the Swedish movements, though less frequently used by physicians, are also a valuable method of treatment. Either, if ignorantly and improperly used, is capable of doing much harm to the patient, and it is the object of the book before us to describe the proper methods of performing the manipulations, and to indicate the cases to which they should be applied. The first object at least is well attained. The desciptions are clear, and so well supplemented by the illustrations, that any one with this book and a subject on which to practise, could undoubtedly become proficient in the art of massage. An excellent feature is the simple classification of the manipulations adopted by the author, which makes the whole subject much easier to grasp.

Turning to the section which deals with the diseases to which massage is applicable, we find traces of the specialist's enthusiasm. We doubt if "movements will yield good results in the majority of cases of chorea," nor do we believe that "most neuralgias yield readily to massage," though we know that, in both these diseases, massage is a useful adjunct to other measures. We naturally wonder if the author means *acute* rheumatism when he says that "active movements as well as hacking and beating of the affected parts are of great benefit in cases of rheumatism. In severe attacks the treatment should be applied twice daily (!). Ten to thirty treatments are generally sufficient to effect a cure." However, the work is intended chiefly to teach methods, and for this reason should be in the hands of all nurses and physicians who wish to use massage intelligently and with benefit to their patients.

SPINAL CONCUSSION. By S. V. CLEVENGER, M.D. With thirty wood engravings. Philadelphia and London: F. A. Davis, 1889.

DR. CLEVENGER has placed before the profession a book of some three hundred odd pages followed by a glossary, containing words which are frequently used in the consideration of nervous diseases, and by plates which illustrate the motor points of the extremities, both upper and lower, as well as of the head and neck. While the book is one which consists in an accumulation of the writings of different individuals under one heading, the reader cannot fail to notice that the author has, to a certain extent, put his own stamp upon the work, and the handsome plates which are scattered between the pages show in a very useful way the points at which the different nerves leave the spinal column. Colored plates illustrate the anatomy of the spinal cord and of the tracts which it contains. The most interesting portion of the work consists in the chapter on differential diagnosis and that on "Recent Discussions of Spinal Concussion." That upon "The Treatment of Concussions" has of necessity to be quite short. To the medico-legal investigator the illustrative cases of spinal disease, which are made up of instances derived from personal observation and the observation of others, will be of value in that in this way the general symptoms shown by groups of cases are readily noted and understood. Altogether the book may be considered as one which in a comparatively small space has brought together a large amount of literature of a reliable character, and it is to be recommended to those who are apt to be called upon the witness stand to testify in regard to the results of injury in railroad and other accidents.

The publisher's work is very well done and the plates are excellent.

THE NEUROSES OF THE GENITO-URINARY SYSTEM IN THE MALE, WITH STERILITY AND IMPOTENCE. By DR. R. ULTZMANN. TRANSLATED BY G. W. ALLEN, M.D. Philadelphia and London: F. A. Davis, 1889.

THIS book is to be highly recommended, owing to its clearness and brevity. It is illustrated wherever illustrations are necessary, and is divided into two portions, as indicated in its title, of which the portion on "Sterility

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and Impotence" contains much matter which is of interest. Altogether, we do not know of any book of the same size which contains so much useful information in such a short space.

A TREATISE ON FRACTURES. By ARMAND DESPRIS. TRANSLATED BY E. P. HURD, M.D. Detroit, Mich.: George S. Davis, 1890.

THIS is one of the recent numbers of Mr. Davis's series, and embodies in a very small space the opinions and methods of its French author.

We confess to the belief that we have treatises upon fractures in plenty by Americans; but the publisher's wisdom is greater than that of the medical editor, and Mr. Davis evidently thinks such books profitable, so we have only to thank him for his business tact and foresight.

BY TELEGRAPH.

LOUISVILLE.

(*Special to* THE MEDICAL NEWS.)

To the Editor of THE MEDICAL NEWS,

SIR: The total number of persons killed by the tornado is ninety-six, wounded about two hundred. The injuries resulting fatally are, in the order of frequency, fractures of the skull, thoracic injuries from pressure, asphyxiation from gases, burns, and shock. But few of the wounded will die. As a comparatively small number of the poorer classes were among the injured the hospitals are not crowded, the City Hospital having but five cases, Sts. Mary and Elizabeth and Norton Infirmary having about fifty.

The water-works are so seriously damaged that repair is impossible for many days, and a water famine with its serious results is certain.

The hygienic condition of the city is now more influenced by the snow and rain than by the direct effects of the cyclone.

There are rather more zymotic diseases and pneumonia present than usual, but otherwise there is little of medical interest. No outside help is required.

CORRESPONDENCE.

MUNICH.

(*From our Special Correspondent.*)

To the Editor of THE MEDICAL NEWS,

SIR: The treatment of massage, first established by Thure Brandt, and afterward advocated successively by Profanter, Schultze, Resch, and v. Preuschen, is claiming here such a conspicuous place in the therapy of pelvic and uterine disorders that it may not be amiss to describe briefly the method and mention a few of the features which recommend it.

For example, in retro-positions, without adhesions, the so-called "lifting movement" is employed. The patient lies upon a couch with her knees drawn up and her feet together. The operator stands over her with one knee on the couch and places a hand, on either side, flat against the abdomen, the palms directed slightly toward each other. He presses his hands with gradually increasing force, first upward and together, then downward until he grasps the uterus and ligaments on either side. He slowly draws the uterus upward and forward, at the same time making an oscillating movement with his hands from side to side, gradually allowing the ligaments to slip from his grasp as they become stretched. This movement is repeated three times at one sitting. In addition, the patient is made to undergo a movement by means of which the muscles of the pelvic floor are strengthened. She lies in a half-recumbent position, with her thighs and legs extended and her knees separated; then, while she elevates her pelvis, she brings her knees slowly together. In retroflexions the "lifting movement" is modified as follows: The round ligaments and the peritoneum extending from the bladder to the uterus, forming the vesico-uterine ligament and containing abundant muscular fibres, are stretched by the operator forcing the fingers of the right hand inward over the symphysis, directly against the internal os, while, with the first and second fingers of the left hand introduced into the posterior fornix, he makes counter-pressure.

Brandt offers the following propositions as grounds for his treatment: 1st. The ligaments in positional disorders are relaxed and their muscular fibres are devoid of function. 2d. The support furnished by the floor of the pelvis is in proportion to the tone of the muscles. 3d. By stretching, the muscular fibres of the ligaments are excited to contraction and the uterus held in a normal degree of fixation. 4th. By massage, the pelvic circulation is augmented and function thereby restored.

Such a plan of treatment is difficult to pursue in an institution like the Frauenklinik, where so many cases are handled and where operative treatment for obvious reasons remains the most practicable. It has, however, been used with success, and Professor Winckel includes it in the discussion of the therapy of every case in which it is available.

Influenza attacking pregnant women at the Frauenklinik, presented, as a rule, no unfavorable complications in the course of pregnancy and labor. One case occurred, however, which is of interest on account of the unique combination of symptoms. The patient, suffering from influenza, was first presented in the klinik on January 7th, in the second stage of labor. On the 11th she was again brought before the class, when a history of gonorrhœa, for which she had been treated in the general hospital, was elicited, and the relation of condylomata acuminata, which appeared in profusion over the anterior vaginal wall, to gonorrhœa, was discussed. Two days later a papulo-erythematous eruption appeared over the abdomen and inside of the thighs, without an additional rise in temperature. It was diagnosed urticaria. The cough from which she had suffered now increased, and the temperature rose. Catarrhal pneumonia was diagnosed. Three days before her death, which occurred twelve days after labor, she complained of pain in the abdomen after coughing, but there was so little tympany, and the abdomen was so relaxed and free from tenderness, that the diagnosis of peritonitis was disregarded.

The section, performed nine hours after death by Professor Bollinger, revealed acute, diffuse peritonitis, pleuritis, catarrhal pneumonia with bronchiectasis and multiple abscesses. The uterus was soft and as large as the fist; the lymph spaces in the muscular tissue, here

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and there, were dilated and filled with pus. The ligaments, tubes, and ovaries were covered with plaques of fibrin, their neighborhood evidently being the most active seat of inflammation. The tubes were filled with pus, in which, later, gonococci were found; the fimbriated extremities were permeable. During the autopsy the question arose whether the case was one of puerperal septicæmia with peritonitis, pleuritis by direct extension through the diaphragm and pyæmic abscesses in the lungs, or whether the peritonitis and catarrhal pneumonia were processes due to separate causes. The former view was held by Professor Bollinger; but, later, Winckel, in reviewing the case, established the diagnosis of peritonitis due to gonorrhœal salpingitis; the pneumonia being a continuation of the bronchitis, with bronchiectasis in the course of influenza. The appearance of the Fallopian tubes and their surroundings marked them as the starting-point of the pelvic peritonitis, which evidently had found its origin in the escape of pus from within the tubes by pressure during coughing—an *Überfluss Peritonitis*.

An extremely interesting point is the occurrence of the eruption. After a thorough examination no evidences or history of syphilis were discovered, and the eruption was classed among the rarer symptoms of influenza; the report of similar cases from St. Petersburg, and elsewhere, gave a reasonable support to this hypothesis.

If space permitted, I should like to add a fuller description of a case of extra-uterine pregnancy in which Professor Winckel extracted piecemeal, through the dilated urethra, a fœtal skeleton which measured in length twenty-one centimetres. The fœtal sac had perforated into the bladder through the posterior wall near the vertex. The right femur projected into the bladder and was covered with incrustations. The perforation had been gradual and was not accompanied with any discharge of pus in the urine. In such cases Winckel tries, within the first three months, to interrupt the pregnancy by the injection into the sac through the abdominal wall, at intervals of from six to eight days, of 0.03 gm. of sulphate of morphine, two or three injections usually sufficing.

PARIS.

A New Disease of the Heart. Erysipelatous Pneumonia. Colotomy. Treatment of Club-foot.

To the Editor of THE MEDICAL NEWS.

SIR: At one of the last meetings of the Académie de Médecine, Professor Renaut, of Lyon, made an interesting communication on a new organic disease of the heart denominated chronic essential segmentary myocarditis. According to the author this affection presents a train of symptoms which easily differentiate it, at the bedside, from other cardiac diseases. From an anatomical point of view the disease is characterized by what might be called a segmentary dissociation of the muscular tissue of the heart.

This lesion consists in the softening of the cement substance uniting the cardiac muscular cells end to end. When this cement disappears, it is easy to understand that the fibres of the myocardium will no longer contract synchronously, or with sufficient force, and that cardiac asthenia must result.

This softening of the uniting cement is the only lesion found at the autopsy. The myocardium is in a flaccid condition, its color is gray, and the ventricle can be easily torn.

Histological examination reveals everywhere numerous patches of segmentary dissociation, either isolated or united together. Even where the dissociation is very limited, it is constantly and profusely present in the papillary muscle of the mitral valve.

The disease is most frequently observed in old people, and the first symptom is an irregularity of the heart's action not preceded by hypertrophy. This irregularity takes place without modifying the general characters of the normal pulse-tracing. In segmentary myocarditis, whatever may be the degree of the irregularity, the pulse never takes the form of the asystolic pulse of valvular diseases, nor becomes small, unequal, intermittent, or irregular.

Another important sign is the disappearance of the localized præcordial beat. The beat is diffused or totally absent, or impossible to localize.

The third physical sign is an area of flatness limited by four straight borders. The external border ascends from the fifth interspace vertically to the third interspace, always inside of the mammary line; the internal border goes from the sixth or seventh chondro-sternal articulation to the third interspace. Two transverse lines, one above, along the third interspace, the other below in the fifth, complete this typical rectangular flatness.

On auscultation, one finds a weakening of the normal sounds, and a greater or less irregularity of the cardiac rhythm. In a certain number of cases these signs exist alone, but sooner or later another sign makes its appearance, viz., the medio-cardiac systolic sound. It is a soft, very light sound, situated half way between the apex of the heart and the aortic valves, its maximum being about the middle of the heart; it is not transmitted down the sternum, nor toward the axilla. Another very important character of this murmur is its instability. It will disappear for very long periods, then return again.

The disease may terminate: 1st, by sudden death from syncope in about one-quarter of the cases; 2d, by asystole, which is the most frequent termination. Patients suffering from this disease die easily; a common cold or a traumatism may bring on, in an aged person, rapid death by asystole. The most important pathogenic condition for the development of this variety of myocarditis is senility; almost every old person having the disease to a greater or less degree. In persons of middle age, as possible determining causes, we find alcoholism, the eruptive fevers, and especially typhoid.

As regards treatment, increasing doses of the infusion of digitalis are given when arhythmia exists, or digitaline and champagne, and the patient is protected against bronchitis. In old people, if bronchitis is persistent, as this is probably due to fragmentary myocarditis, the heart tonics and regulators of the arterial circulation are to be prescribed. To digitalis the author adds ergot as a tonic for the vessels.

At one of the last meetings of the Académie de Médecine, Dr. Mosny presented a clear case of erysipelatous pneumonia, which occurred in a girl, who, while nursing a patient with facial erysipelas, was taken with pneumonia and died in two days. At the autopsy, a very limited

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area of lung tissue presented the lesions of broncho-pneumonia, which was demonstrated by histological examination. On the other hand, bacteriological cultures showed characteristic colonies of the streptococcus of erysipelas without the presence of any other micro-organism.

Professor Laboullene, at the next meeting of the Académie, mentioned the fact of having observed erysipelas followed by a special form of pneumonia. Six persons were successively taken with pneumonia; this disease being at first localized, then extending to the whole lung of one side, finally extending to the opposite lung, and invariably ending in death. One of the patients, who had a well-established pneumonia, developed a facial erysipelas. There is no question that the contagious agent was the microörganism of erysipelas in every one of these cases.

At the Société de Chirurgie Dr. Kirmisson defended Dr. Phelps's (of New York) treatment of club-foot by section of the retracted muscles. Last year, Dr. Kirmisson performed this operation seven times in four children. The first case was a child four years old, who, by Phelps's tenotomy, has now a useful, though, perhaps, not a very well-formed foot. The second case had already been operated upon, the tendo-Achillis had been cut, and the patient had worn many different apparatuses; the result by the above method was perfect. The other two had been previously operated upon—excision of the astragalus had been performed in both cases with bad result; Phelps's method gave these patients good use of their feet. Volkmann has also used this method in twenty-one cases, with the best results.

On the other hand, Dr. Lucas Championnière, who is the antiseptic surgeon, *par excellence*, of Paris, advocates the removal of as much bony tissue as necessary to correct the deformity; he himself claims to have excised in one case the astragalus, scaphoid, part of the cuneiform, the cuboid, and calcaneum. Dr. Championnière adds that a large excision assists very much the union of the soft parts, and this rapid union plays an important *rôle* in the final success of the operation. Treated in such a manner, a patient is able to walk at the end of six weeks, at first wearing a boot with lateral splints, to prevent a sprain or lateral movements.

Professor Verneuil spoke before the Société de Chirurgie on iliac colotomy, and rapidly passed in review the different methods of operations recommended.

Dr. Verneuil usually operates as follows: 1st. The intestine is drawn out, so as to expose through the abdominal wound about two-thirds of the intestinal circumference. 2d. This exposed portion is temporarily transfixed. 3d. From ten to twelve sutures are inserted in the form of an oval crown. 4th. Excision with the thermo-cautery, of all the portions of intestine comprised within the sutures. Verneuil has practised this method more than twenty times, and has had no bad results; the important point being to excise a large portion of intestine—about two-thirds of the circumference.

Maydl's process is a different one: the sigmoid flexure of the colon is drawn out of the abdominal wound until its mesocolon becomes visible; the mesocolon is then perforated near its intestinal insertion with a blunt instrument; in this opening is introduced a rigid rod, such as a piece of a catheter surrounded by iodoform gauze; this rod is then laid flat upon the abdominal wall. From the fourth to the fifth day a button-hole incision, through about one-third of the circumference of the intestine, is made. On the fourteenth day all the protruding part is excised.

Professor Guyon presented at the last meeting of the Académie des Sciences a very interesting work on the pathological anatomy and physiology of retention of urine, as a result of his clinical observations. Dr. Guyon finds that whatever may be the causes, forms, or duration of retention of urine, fever will never be present if the retention is not of septic origin, or if the patient has not been subjected to infection. Retention of urine, and especially incomplete retention, is always accompanied by polyuria. Moreover, retention of urine always brings on congestion of the urinary organs, which explains why, in prolonged retention, the urine is brown or red. Even a true hæmaturia may occur after a complete and rapid evacuation of the bladder. Experimentally one finds, in the bladder and kidneys, small interstitial hæmorrhages; or even, in prolonged retention, more apparent lesions which are characterized by a flattening and granular state of the renal epithelium.

If the retention lasts a long time, the secretion becomes very much reduced; the bladder loses its contractile power, next the ureters; and then complete stasis of the urine is established. If the retention is only of twenty-four hours' duration, the urethral contraction can be regained by simply evacuating part of the contents of the bladder, or by electrization. If, however, retention has been of long duration, nothing will establish the contractile power—for this phenomenon is under the immediate influence of the intra-vesical tension.

As regards polyuria and congestion, the anatomical lesion and physiological disturbance are in direct relation to the intensity and degree of the tension. Every fact corroborates this, whether in acute states brought on by experimentation, or in chronic states observed in the clinic.

As regards the final results or consequences, they will depend entirely upon the early or late intervention of the surgeon, and whether the bladder alone is involved, or whether all the renal apparatus is out of order.

At the last meeting of the Société Médicale des Hôpitaux, Professor Hayem made an interesting communication on the contractile power of red blood-corpuscles and pseudo-parasites of the blood in extreme anæmia. If normal blood is examined under the microscope, the red blood-corpuscles are found to be immovable; if, however, the blood of an anæmic in whom the number of blood corpuscles is reduced below one million be examined, one finds movement in one part or in the whole mass of the corpuscle. Four different types are described by the author:

In the first, the red globules contract in a mass, and the globule is seen to fold itself up, even appears to undergo segmentation; this is due to an amœboid contraction.

In the second type, one finds red corpuscles of medium or small size presenting prolongations in the form of a glove or flagellæ. These corpuscles are sometimes immovable; at other times their prolongations are seen to move about.

In the third type, one finds corpuscles oscillating around an axis passing through the long diameter.

In a fourth, we have the very small elements of the

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blood, which easily displace themselves, and resemble true parasites; they also oscillate around their vertical axes, and are capable of folding movements.

These four types of blood elements can exist in one single drop of blood, excepting the first, which the author has only found in one patient.

THE MILWAUKEE CLINICAL SOCIETY.

To the Editor of THE MEDICAL NEWS,

SIR: Your journal of March 1st published a communication from Milwaukee, giving its present standing in the medical world. Mention was made of some medical societies, and amongst them "The Clinical Club." This club was founded January 1, 1886, and up to the present year was known as "The Bartlett Clinical Club"—named after one of our pioneers in medicine, and a man well known as an active worker in the American Medical Association. Considering that this name was not broad enough to demonstrate the club's work, it has been changed to "The Milwaukee Clinical Society."

The organization and principles upon which it is founded being rather different from medical societies in general, I have thought it might be of interest to the profession to learn of its existence and the groundwork upon which it rests. It is a chartered corporation, without stock, and governed in a measure by a board of directors. The directors not only look after the finances, but all business, usually known as "miscellaneous," is first discussed and voted upon by them, before being presented to the Society for ratification, thus saving the Society's time and giving more chance for clinical work. Members are elected by ballot, and the election must be unanimous. The candidate must be balloted for by every member of the Society, either in person or by sealed ballot to the secretary.

The motto of the Society is *Fraternitas et Scientia*, and in order that the "brotherhood" may be the firmer, the number of members is at present limited to twenty-five, and members are not taken in any faster than they can be thoroughly assimilated. The meetings are monthly. A dinner is served in the rooms at 6 P. M. This social feature of the Society renders that brotherhood so much the firmer. At 8 P. M. the scientific work commences. Two papers more particularly relating to clinical work are read and discussed; then follow clinical reports by members in rotation, and no member is allowed under any condition whatsoever to say during this part of the session, "Nothing to offer." He *must* say something, be it ever so trivial; and it has often been found that some of the simplest and most common clinical work elicits the most discussion, and is of immense advantage in practice. The chair is occupied by a different member of the Society, in alphabetical rotation, at each meeting; thus each member feels that he has a governing voice in the work. The time for adjournment by the constitution is 10 P. M., no matter what may be in process of discussion.

It is an unwritten law that every member must be present at the meetings, and an absence from three consecutive meetings, without good excuse, is sufficient cause for expulsion.

Last year, with nineteen resident members, the average attendance was fifteen. May and December found every member present. Each member has the privilege of inviting a guest to its meetings, thus serving as a convenient means for new-comers to become acquainted with members of the profession, and also giving a good opportunity of entertaining professional visitors from abroad.

The Society owns a library of 1500 volumes, and subscribes for twenty-two German and English journals, and has also commenced a pathological museum.

These methods have been found to be most satisfactory, and a society with more harmony of feeling, personal and professional, cannot be found in the country. It will be seen that the motto, *Fraternitas et Scientia*, is freely carried out in its organization.

SAMUEL W. FRENCH, M.D.
1216 GRAND AVENUE, MILWAUKEE, WIS.

BACTERIOLOGICAL EXAMINATIONS AT AUTOPSIES. BACTERIOLOGICAL EXAMINATION OF DRINKING-WATER.

To the Editor of THE MEDICAL NEWS,

SIR: I am only a general practitioner, residing in a small place in what the people of Philadelphia would denominate "the far West." I have not the privilege of weekly attendance at an academy of medicine or other learned body of medical men. For these reasons I must depend almost exclusively upon reading, in my endeavor to keep within sight of the advancing hosts of medical science. In my reading I meet with a few things which amuse me very much, and with many things which afford me a great deal of instruction. I desire, with your kind permission, to make an occasional comment on what I read.

Among the things which have amused me are two with the titles as given above. The first is a leading editorial in what claims to be, and really should be, one of the best American medical journals. The learned editor attempts to give a synopsis of the instructions of Babes for making bacteriological examinations at autopsies. I will make a quotation from this editorial, italicizing the amusing points so that all may recognize them.

"The first section of the skin, from the chin to the pubes, should include the subcutaneous cellular tissue and the muscles, and is made with one sterilized knife. Another sterilized knife is then used to open the peritoneal and thoracic cavities. *The liquids contained in the peritoneal, pleural, and pericardial cavities are then sterilized by plunging a platinum wire into them, and they are then collected in culture-tubes or on plates previously prepared.* When these liquids are used for inoculating animals, a sterilized syringe should be used. For the bacteriological examination of organs, the surface of the organ is burned with a hot glass-rod over an extent of about 2 cm. The tissue underlying the burn is then torn out. *From this fragment is taken, by means of a red-hot platinum wire, a piece to be used for inoculation. The liquids contained in the intestines, bronchi, bladder, ureter, etc., are collected on gelatin plates.*"

Did anyone ever write anything more mirth-provoking than the above? We may stop laughing at the homœo-

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path who talks about the great dynamical potency of his high dilutions. Our editor sterilizes the "liquids contained in the cavities of the body by *plunging* a platinum wire into them." What a deadly instrument a bit of platinum wire must be! But the wonder does not stop here; these very liquids which have been so expeditiously sterilized are used for the preparation of cultures. By what magic power the poor germs in these liquids are endowed with new life when transferred to the tubes and plates we are not told. In the examination of organs, the bit which is used for inoculation purposes is taken up on a red-hot platinum wire. Here the platinum wire, while red-hot, seems to have lost all its powerful germicidal properties. The able editor has not informed us as to the size of the gelatin plates on which he collects the liquids contained in the intestines, bronchi, bladder, ureter, etc., but as he is a Chicago man we could not expect him to be satisfied with drops of these fluids. I wonder if Babes has seen this learned exposition of his instructions? If so, he has probably a very high opinion of the learning of the profession in America.

The second thing which has afforded me much amusement comes from Germany in the shape of a book written by two distinguished professors. Of course, it is the height of absurdity for a village doctor in America to criticise anything from a German professor, but there is no law against being amused, even when the cause is imported at 50 per cent. duty. I have paid the German publisher, and I have helped to swell the surplus in the treasury of the United States, and I want to tell my benighted brethren about the funny things for which I have paid. The volume before me is one of more than 700 pages on the subject of the analysis of drinking-water. The first part is devoted to the chemical analysis of drinking-water, from the pen of Professor Tiemann, of Berlin, and is worth having on account of its great merit; the second part discusses the bacteriological examination of water, is written by Professor Gärtner, of Jena, and contains many facts of value, but its chief merit lies in the conclusions which the learned professor has reached, and which I will lay before your readers. They are as follows:

(1) "A water which contains pathogenic germs should not be used."

These are wise words, but the author goes on to tell us that it is well-nigh impossible to detect pathogenic germs in water, and that we cannot expect to be able to succeed much better in the future.

(2) "A water which may possibly contain pathogenic germs should not be used."

The question now arises, how are we to decide whether or not a given water might possibly contain pathogenic germs or not. The author tells us to decide this matter by an inspection of the surroundings of the source of water-supply. Why, then, we may ask, is there any need of the bacteriological examination?

(3) "A large number of germs in the water of a well whose surroundings are unsanitary, and whose construction is improper, should condemn the use of the water."

(4) "However, if the surroundings are sanitary and the construction proper, the water may be used, notwithstanding the fact that it contains a large number of germs."

Comments upon these conclusions are unnecessary. We have been promised so much from the bacteriological examination of water, and now we are told in sum and substance that if the water contains human excretions and dead animals it is not altogether safe to drink it, but we cannot find out whether these undesirable additions to nature's beverage are present or not, save when we are fortunate enough to see the sewer or other sources of contamination pouring its contents into the water.

NEWS ITEMS.

Lectureship on Orthopædic Surgery in the Woman's Medical College.—H. Augustus Wilson, M.D., Professor of General and Orthopædic Surgery in the Philadelphia Polyclinic and College for Graduates in Medicine, has been elected Lecturer on Orthopædic Surgery by the corporators of the Woman's Medical College, and commenced his course on Thursday, March 20th. The corporators established this new course at the request of the Faculty, who also nominated Dr. Wilson.

A Vacancy.—At present there is a vacancy in the Chair of Pathology and Practice of Medicine in the Medical College of the State of South Carolina, and the Trustees and Faculty are anxious that all persons desiring such a position should apply to them. As is probably known to most of the readers of THE MEDICAL NEWS, this college has now adopted a three-year course, to take effect with the matriculates of 1890.

New York Eye and Ear Infirmary.—The corner-stone of the new building of the New York Eye and Ear Infirmary was laid, with appropriate ceremonies, by the President, Benjamin H. Field, Esq., on March 15th. Addresses were delivered by Mr. J. Harsen Rhoads, the Hon. George William Curtis, and the President. The Hon. Chauncey M. Depew presided over the exercises.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 25 TO MARCH 31, 1890.

By direction of the Secretary of War, HENRY P. BIRMINGHAM, *Captain and Assistant Surgeon*, is relieved from the station at Fort Klamath, Oregon, and from temporary duty at Vancouver Barracks, Washington, and will report in person to the commanding officer Boise Barracks, Idaho Territory, for duty at that post. —Par. 6, *S. O. 72, A. G. O., Washington, D. C.*, March 27, 1890.

TAYLOR, M. E., *Captain and Assistant Surgeon.*—Is granted leave of absence for one month, on surgeon's certificate of disability, with permission to apply for an extension of one month. —Par. 3, *S. O. 26, Department of the Columbia*, March 18, 1890.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FROM MARCH 3 TO MARCH 24, 1890.

LONG, W. H., *Surgeon.*—Leave of absence extended five days, March 11, 1890.

DEVAN, S. C., *Passed Assistant Surgeon.*—To proceed to Erie, Pa., as Inspector, March 12, 1890.

HEATH, F. C., *Assistant Surgeon.*—To proceed to Cleveland, Ohio, for temporary duty, March 18, 1890.

STIMPSON, W. G., *Assistant Surgeon.*—Commissioned Assistant Surgeon March 11, 1890. Assigned to temporary duty at New York, March 13, 1890.

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVI. SATURDAY, APRIL 12, 1890. NO. 15.

ORIGINAL LECTURES.

REMOVAL OF THE HAND-CENTRE FROM THE CORTEX CEREBRI IN A CASE OF FOCAL EPILEPSY.

A Clinical Lecture,
delivered at the Jefferson Medical College Hospital.

BY W. W. KEEN, M.D.,

PROFESSOR OF SURGERY IN THE JEFFERSON MEDICAL COLLEGE.

GENTLEMEN: Before beginning the case of to-day, I want to pass around some specimens which will interest you.

The first is a scar, which was removed from the scalp in September, 1888, in a case of epilepsy, the result of a fall, without fracture of the skull. A year later, September, 1889, no benefit having accrued from the removal of the scar, the boy was trephined and a considerable mass of damaged brain tissue removed. Since that time there has been no recurrence of his fits.

The second specimen is a very large tumor which I removed from the brain two years ago. A large part of the dura, as you will observe, is adherent. The patient has suffered with a few epileptic attacks since the operation, but his attacks have been very much less frequent and less severe than before. His eyesight, which was almost gone, has slightly improved, though his general condition is but little better.

The third specimen is another one of damaged brain tissue with a portion of the dura, in which you will plainly see a scar. The injury to the dura and brain resulted from a depressed simple fracture and was followed by epilepsy. The patient has had no attacks since the operation, now nearly two years ago. He was out on the street on the eighth day after the operation.

These cases will show you how fearlessly and successfully we can now operate on the brain, and will encourage you as to the probable result in the present case.

Let me now narrate the history of the case upon which I shall operate to-day. The little boy, Willie P., aged six years, comes from Delancy, N. Y. When fourteen months old he fell from a haymow a distance of ten or twelve feet, upon a plank flooring. He was brought into the house unconscious and remained so for some time. He was examined from head to foot, but no evidences of injury could be found. It is not positively known that he struck upon his head at all, although it was thought so from the unconsciousness which followed the fall. His disposition soon after this changed materially for the worse. He became irritable, obstinate, and ill-tempered, and has remained so up to the present time, and to such a degree that when he was referred to Dr. Hansell for examination of the eye-ground, a few days ago, he bit and scratched so violently that, in order to have a satisfactory examination, etherization was necessary. At two and a half years of age he had dysentery, and on the second or third day of this sickness, January 6, 1886, his first epileptic fit occurred. He has, therefore, been an epileptic for four years. His attacks usually occur from three to six times *per diem*, with intervals of comparative freedom from them. His father, an intelligent clergyman, estimates that in the four years he has had over 5000 fits. Of these about 80 per cent. began in the right hand, while the other 20 per cent. began in other parts of the body. A year ago, for a time, they began in the face. He has suffered also from a number of attacks of *petit mal.*

When he came here I immediately placed him in the hospital under the charge of a competent nurse, who had been familiarized with such cases in the Philadelphia Hospital. My object in placing him under her care was to obtain exact observations of the character of his fits. I regard this point as of great importance. Never rely too much on the statements of parents or other relatives. Invariably, and very properly, the impulse with them is not to observe but to succor the patient. The nurse, whose sympathies were not specially involved, was strictly enjoined to make the most cold-blooded scientific observations of his attacks, being careful, of course, however, to see that the boy did not injure himself in any serious manner. "Do not touch him," I said to the nurse; "simply look at him; see everything; make a note of it the moment each attack is over, no matter whether they appear precisely alike or not; then give me the result." This result I have now obtained in some twenty attacks.

First, the child fell; his eyes were fixed, the pupils being immobile to light, as was ascertained by the nurse with a match. The eyes usually turned to the left, but the head turned to the right. The right hand began to tremble violently and then became flexed. The whole arm was then raised in front of and across the chest. The convulsive movements then became universal. Sometimes the boy will not fall, but will run to and fro within a very limited area. A rather unusual observation of his father's is, that a large dose of bromide was almost always followed by paralysis of the right hand. When the attacks began the child had a vocabulary of about forty words, but gradually he has lost this vocabulary, word by word, until it has come down to three words and a little jargon. He says "papa" and "mamma" and "no," but never "yes."

Dr. Hansell has tested his eye-ground and found nothing abnormal. His sense of vision he believes to be good, but the patient's age and disposition prevent absolute judgment as to this point. Word-blindness cannot be tested, of course; word-deafness does not exist, for he recognizes a command, and if in a good humor will obey it.

These are the facts in the case. Medically every-

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thing has been exhausted. What are the principles by which we may determine whether surgery can come to his aid?

Cases of epilepsy can be divided into the traumatic and non-traumatic varieties; and again, in the traumatic variety the injury may have been either in the motor zone or in the so-called latent zones. This diagram of the brain centres as ascertained by experiment upon animals shows the motor zone with the centres for the head, and, from above downward, those for the leg, the arm, and the face; and in the arm centre, from above downward, the centres for the shoulder, the elbow, the wrist, and the hand. Notice that in this boy the centre for the right hand is, presumably, the focus from which originates the spasm, and near it is the centre for the right face, and yet lower down, but near by, the motor centre for speech. Now, as I stated to you, his face was involved for a time, and his speech has become limited and there is also a certain aphasic character to it.

If there be an old depressed fracture over the motor area corresponding to the muscles first involved in the epileptic attacks, it would be proper to trephine at once and treat the brain as the facts discovered by the trephining would indicate—probably by excision of the centre for such initial spasms.

But suppose, now, as in the first specimen which I showed you, there is a scar over the motor zone but no depression of the skull and no positive evidence of injury to the brain. It would not be wise for you to trephine at once. First, the scar should be excised, as was done in that case. If the attacks return and still begin in the muscles supplied by the cerebral centre lying directly under the scar, then it would be justifiable for you to trephine and to remove the portion of the brain in which the spasm begins. It would be right, I say, in the present state of our knowledge, for trephining is not at the present day a dangerous operation. The mortality from trephining, *per se*, is only about 1.6 per cent.

Note the expression that I have just used, "in the present state of our knowledge." Cerebral surgery has but just begun, and we are making its history at present. While it is true that many cases have not been cured, not a few of them have been improved, and it is impossible for us as yet to say what surgery can do for them. It is only by trying, in the cases which afford a reasonable prospect of benefit, that we can tell. Were the operation dangerous to life, it would not, in my opinion, be justifiable; but, as I have stated, the danger is but slight, and if, as is probable, further experience will show us methods more satisfactory and efficacious than the present, an immense gain will have been made.

Secondly, you may have a case of traumatism situated in one of the latent zones—that is, the area of brain tissue the functions of which have not been as yet ascertained. In these cases the propriety of trephining is still very doubtful unless evidence of injury is very decided, and especially unless there be a distinct depression.

There are certain centres, as that for sight, to which the same reasoning will apply as is applied to the motor zone. If evidence of injury is clear; if there is hemianopsia from injury to one cuneus, for example, it would be proper to trephine; but where the evidence of injury and the symptoms are doubtful it would be wiser at present to wait.

Thirdly, in the clearly non-traumatic cases, as a rule, it is best not to trephine, for we are in great doubt as to what part of the brain is the seat of the lesion. Especially is this the case in those long-standing epileptics in whom the "epileptic habit," as it has well been termed, is so established that the fits will continue in spite of any operation.

One exception may be made, the so-called "focal" epilepsies, in which the spasms begin always, or nearly always, in one part of the body. Removal of the centre supplying these muscles may in time be proved to be the proper course. At present we are gathering the evidence, but it is not yet all in, and until we have a much larger experience than at present it would be unwise to be too dogmatic.

Now, let me apply these principles to the case in hand. It is uncertain whether this is traumatic, and, naturally, you will ask me if I have shaved the patient's head in order to determine whether any scars exist. I have not done so, because his wilfulness is such that he could only have been shaved during anæsthesia, and that will be the first step in the operation. His hair, however, has been cut sufficiently short for me to ascertain almost positively that there is no visible scar either over the centre for the right hand or at any other point. Shaving of the head is, in my opinion, an indispensable prerequisite to a careful diagnosis. Unknown scars I have constantly found, and in the boy from whom the first specimen came the scar that was thought to be the result of the fall was not over the injured portion of the brain, but it lay under another one not far away, and of this scar no history could be obtained.

I have determined in the present case, in spite of the fact that no scar exists, to examine the centre for the right hand on account of the immense preponderance of attacks in which this is the initial part of the body involved. It is not at all improbable that the boy may have been injured over this area by the fall, which, though not producing any scalp lesion, yet may have ruptured or otherwise injured the brain tissue underneath. Whether this is so or not can only be ascertained by an exploratory operation. Having shaved the boy's scalp, the next thing is to map out his brain. Here are two instruments, Horsley's and Wilson's cyrtometers. I shall use Wilson's in this case, as it gives the location of the fissure of Rolando proportionally, instead of in inches, and I prefer it especially for this case because the patient is a child, and to apply the same measures in inches to his head as to that of an adult might lead me into error. The fissure of Rolando extends from near the middle line at a point posterior to the glabella of 55.7 per cent. of the distance between the glabella and inion and runs downward and forward at an angle of 67 degrees. I mark it now with an aniline pencil by means of Wilson's cyrtometer. In an adult the length is three and a quarter inches; I shall assume it to be three inches in this child. Having fixed the fissure of Rolando, I can readily locate the position of the hand-centre by means of this diagram of the cerebral centres, and it is over this centre that I shall trephine. The child's head, after the hair was cut, was very carefully scrubbed yesterday with soap and water, then with ether, then with bichloride solution (1 : 1000), after which a dressing of bichloride of the strength of 1 : 2000 was applied, and, as you saw, was still remaining upon his

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head when he was brought into the room. While in other parts of the body a dressing of the strength of 1 : 1000 will do, I have found that to the recently shaven scalp a dressing of 1 : 1000 is irritating and often pustulates; therefore, it is always well to use a dressing no stronger than 1 : 2000. The disinfection was repeated to-day with special care, in consequence of not having been able to shave his head yesterday.

Next, I will mark the line of the fissure of Rolando on the skull itself, by making two little cuts in the scalp at the upper and lower ends of the line of fissure, and then with a small gouge through these cuts I make two little nicks in the bone. You can readily understand that when I have raised the flap, and with it the mark of the aniline pencil over the fissure of Rolando, there would be nothing on the skull itself to guide me. These little nicks, then, will show me the two ends of the fissure of Rolando, and, therefore, where the fissure itself lies.

Next, I make a large horseshoe-shaped incision with the convexity upward and reaching well toward the middle line. Each vessel that spurts on the scalp I seize at once with hæmostatic forceps until the field of operation is almost dry. You need not fear to grasp the entire thickness of the skin, or even of the scalp, in the bite of the forceps. Even though the skin is severely compressed by them for an hour or more it never sloughs.

With this trephine I remove a disk of bone an inch and a half in diameter. The dura being exposed, I carefully lift it by a tenaculum one-eighth of an inch from the margin, and make a little nick in it sufficiently large to admit the point of a blunt pair of scissors. This nick is made at the upper part of the trephine opening. I then divide the dura circularly throughout three-fourths of its circumference, leaving the remaining quarter as a means of sustenance and nourishment. This base of attachment is best left below, because the vessels come from below upward. In cutting the dura you will notice that I have lifted it very carefully with my forceps. I am very careful that the scissors shall not injure any of the large veins beneath. The brain is now exposed, and, to the eye, nothing seems abnormal. Next, I examine it by touch, and herein comes the value of experience. I have now had my finger on the living brain substance fifteen times, and I am able to determine far better than two years ago, at my first operation, what is normal hardness or softness, and what abnormal. In this case I find nothing abnormal. In the exposed brain precisely under the line where I marked the fissure of Rolando you can see a fissure which is evidently the one we are seeking. I shall next locate the hand centre by means of the battery. From the moment that the brain was exposed no antiseptic solution has been applied to it; my reason for this being, that, as Horsley has shown, all antiseptics diminish the susceptibility of the cortex, and we are apt to get no response from the faradic current. Touching the lower part of the convolution, in front of and behind the Rolandic fissure, I get no response, as you see. Touching it a little further up the thumb moves, and a little higher still the wrist. But as I am now so near the edge of the opening in the bone, and may have trouble from these large dilated veins, in order to have more room it is necessary for me to enlarge the opening with a pair of rongeur forceps until I get an area sufficiently large for my manipulations, and space sufficient to cope with what I expect will be rather free hæmorrhage from the veins. Again applying the battery you see the movements of the thumb, and now of the wrist, and, further toward the middle line, of the elbow. Having fixed by this means the position of the hand centre, I now excise it. The hæmorrhage, as you see, is very abundant; much more than any that I have previously seen. It is chiefly from one of the large veins near the superior longitudinal sinus. Hæmostatic forceps hold some of the cerebral vessels well, but these veins are so fragile that they tear with the weight of the forceps. Next, by water as hot as I can comfortably bear in my manipulations, probably about 120°, I try to arrest the hæmorrhage, but the vessel is too large, and I shall, therefore, ask Professor Forbes to place his finger on it while I pass a strand of catgut immediately under it. Tying this with great care, gently, and with exactly equal tension on both ends, you see that the hæmorrhage is arrested. I will now test the cortex surrounding the excised part with the battery to see whether I have removed all the centre for the wrist and hand, and you notice that the test shows that I have done so. Seeing that the hæmorrhage is entirely arrested, I shall now introduce a drainage tube, sew up the dura, and put the bone back with a few strands of horsehair under the scalp and suture the latter. The piece of bone, you will observe, was placed in a sublimate solution (1 : 2000) in a cup, and this cup has been placed in a basin filled with hot water constantly renewed by an assistant whose sole business is the care of the bone, and who sees that the thermometer in the outer basin constantly marks from 100° to 105°. Over the wound, which I have now closed, I place an abundant sublimate dressing and a bandage. The little patient, although suffering somewhat from shock, is not in a precarious condition, but I shall apply some external heat and get him to bed as quickly as possible. The operation is always a long one, and has lasted to-day over an hour and a half.

NOTE.—Speedy recovery took place, and the child was taken home three weeks later. Up to February, 1890, he was steadily improving. He had had a few attacks of *petit mal*, but no severe convulsions. His vocabulary has gradually increased so that he is using twenty-three words—a gain of twenty—and combines them occasionally into sentences of two or three words. His disposition is greatly improved, so that he is much more docile and plays peaceably with other children. Dr. Coplin, in his report of the microscopic examination, states that there are distinct evidences of alterations of structure, both in the vessels and the brain tissue. This will be more fully reported elsewhere.

EXCESSIVE DYSMENORRHŒA. CHRONIC OVARITIS.

A Clinical Lecture
delivered at the Hospital of the University of Pennsylvania.

BY WILLIAM GOODELL, M.D.,
PROFESSOR OF GYNECOLOGY.

GENTLEMEN: The first case I show you this morning is one of excessive dysmenorrhœa. The woman is unmarried, and twenty-four years old. Her puberty began

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about the age of fourteen with painful menstruation, and it has been going on from bad to worse until now her sufferings have become so great that her life seems a burden to her. Cases like this are not confined to the experience of the specialist. Each one of you who engages in general practice will meet with them. Therefore you should know how to treat them.

I have not yet examined her, but let me tell you what I expect to find. I am nearly certain that there will be found an anteflexion of the uterus, with a stenosis of the cervical canal. This anteflexion of the organ is the natural condition of the virgin uterus, but its exaggeration makes the flexion pathological. The cervical canal being bent, does not allow the fluid in the uterus to come away as rapidly as it exudes from the mucous membrane, so that it accumulates both in the womb itself and in a portion of the cervical canal above the flexure, producing greater and greater pain, until by dilating the parts it straightens the obstructive bend, and thus gains an avenue of escape.

For this affection the remedies that I use are either medicinal or mechanical. Among the former I put antipyrine foremost. This drug is of especial value, because in these cases much of the pain is not traumatic, but sympathetic. My plan is to give ten grains at once and then five grains every hour or half hour until twenty to thirty grains have been taken. If this affords relief, I know that I am on the right track, and continue this method of treatment *pro re natâ*. But if this plan fails to give relief, I adopt some other method of treatment. Instead of giving this remedy by the mouth, it is often best to administer it by enemata, in twenty-grain doses, until sixty or ninety grains have been given. This will as fully test its efficacy as the twenty-grain doses by the mouth. If this fails, I resort to other remedies, hoping to find one that is of avail. A tentative empiricism, founded upon sterling common sense, is not quackery. The second medicine that I generally give is the hydrobromate of hyoscine. One-fourth of a grain is dissolved in four ounces of water and one teaspoonful of the solution, viz., one one-hundred and twenty-eighth ($\frac{1}{128}$) of a grain, is taken every hour until either relief is secured or its physiological effects, which are extremely like those of atropine, become manifest.

But I think this is a case of mechanical dysmenorrhœa, and now let me see whether my off-hand diagnosis is correct. Upon making this physical examination, I find that I was nearly right, but not quite. She has a comparatively rare uterine displacement, which may, at first, sound to your ears like a paradox, viz., she has retroversion of an anteflexed womb. That is to say, the anteflexed womb as a whole has fallen backward. This mechanical obstruction—the anteflexion—by not allowing a perfectly free exit for the uterine secretions, causes primarily their accumulation, and secondarily their decomposition before they exude from the body, so that women often have foul-smelling discharges during painful menstruation.

The treatment here is rapid dilatation of the cervical canal, which should be performed as follows:

First, I cleanse the vagina by syringing it out with a 1 : 2000 bichloride solution. I now introduce my speculum, which reveals a cervix exceedingly small, and an os imperfect or undeveloped in character. Again is the vagina swabbed and syringed out.

During this time my instruments have been lying in a 1 : 2000 bichloride solution. From this solution I take my slender dilator, which, with its curvature in the posterior direction, I shall pass up into the cervix until it meets with resistance. Then I shall turn the chord of the curve toward the opposite direction, in hopes thereby to pass the obstruction at the internal os. I fail to get the dilator to pass the angle of flexure, so I stretch open the canal with it and try again. Twice I fail in the attempt, but at the third time I succeed in passing the dilator into the uterus by carefully feeling my way.

Before going any farther, let me stop for a moment to do what I should have done before beginning the operation, and that is, to introduce into the rectum a suppository of one grain of the aqueous extract of opium. This is done because after she recovers from the effects of the ether she will suffer a good deal of pain, and she may indeed need another suppository in addition to this one.

Having now passed the instrument well into the womb, I am ready to dilate slowly and carefully up to its full extent. This little instrument having done its work, the time has come to introduce a larger and stronger dilator with furrowed beaks so as to prevent slipping. I find I have a good deal of difficulty in getting this larger instrument into the womb. When it passes the internal canal its blades are slowly dilated, generally up to one inch and a quarter. But since this cervix is smaller than usual, I shall rest contented with one inch.

Having accomplished this and with rather less trouble than I had expected, I now complete the antiseptic process by thoroughly syringing out the whole vagina and cervical canal with bichloride solution. The cervical canal being now dilated, there is not so much danger of the bichloride remaining in the womb and thus causing uterine colic, as there would be with a very small canal, which might retain the mercurial solution.

This is the three hundred and forty-second case of rapid dilatation that I have made, and the results have been most satisfactory. I happen to have these numbers at my tongue's end, because I am just now writing an article on the subject for our *University Medical Magazine*.

The *rationale* of rapid dilatation is as follows:

Just as a piece of India rubber will, when overstretched, contract again, but never to its original length, so this cervical canal will contract, but never to its original small calibre. Hence I can assert with great confidence, that the woman will be greatly benefited, if not cured. I say if not cured, because there are in the world to-day thousands of women who have never consulted a physician, and yet who suffer more or less acutely at their menstrual periods. Absolutely painless menstruation is indeed the exception.

The last thing I do is to put into the vagina a ten-grain suppository of iodoform. This is done after thoroughly cleansing all the parts once more with the sublimate solution. I have in this case torn the cervix a trifle, but it will add to the success of the dilatation, and it is of no consequence considering the antiseptic precautions used at the operation. I once made a tear as long as a third of an inch, but it was followed by no bad consequences. Indeed, until comparatively recently, the knife was constantly resorted to for the purpose of enlarging the cervical canal throughout its entire length.

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The medicine that she will take will be ten grains of the bromide of ammonium and five grains of the chloride of ammonium in one teaspoonful each of the compound tincture of gentian and water before meals. If much pain follows the operation, another opium suppository will be administered.

Beginning to-morrow morning, she will have twice a day a douche of 1:4000 solution of the bichloride of mercury. When vaginal injections are used, some of the fluid will be retained on account of the curve in that canal and mercurialization may ensue. Therefore I shall direct the nurse, when she gives this douche, to press upon the upper edge of the perineum and carefully thereby expel all the fluid remaining in the vagina, the curve of which is straightened by this manœuvre.

For nervous dysmenorrhœa I give the following mixture:

℞.—Chloral . . . . 2 drachms.
Potassium bromide . . 4 "
Camphor water . . . 6 ounces.—M.

One tablespoonful three times a day. If the pain is great, I add to this mixture three grains of the sulphate of morphine, and in some severe cases it may be necessary for a patient to take this remedy even more frequently; but I make it a rule to use the morphine as little as possible, as it deranges the stomach and digestive apparatus.

Let me here give you the benefit of a useful observation. There are many women and men who will tell you that they cannot take opium, in any form, because it disagrees with them. They will, it is true, suffer greatly from the after-effects of opium, provided it is given for any nervous condition or for any nerve pain. But let them have traumatic pain—due to an accident or to an operation—and opium will perfectly agree with them. I have verified this fact so many times, that I never hesitate to give opium after a surgical operation in defiance of the patient's protest or of that of her physician.

The causes in general of dysmenorrhœa are as follows: 1. Anteflexion, which I have just discussed. 2. Retroflexion, especially when it is congenital. Both these causes are often cured by pregnancy. 3. Stenosis, for which mechanical dilatation is the great remedy. 4. False membranes blocking up the cervical canal. For this I used to apply nitric acid, but now I prefer dilatation followed by curetting and intrauterine applications. 5. Polypi, which act like ball valves and demand removal. 6. Those cases of neurasthenia that are characterized by an irregular distribution of nerve force, causing spasm of the circular muscles of the cervix. Such undue discharge of nerve force may occur in other groups of muscles, especially of the circular muscles or sphincters. Thus we may have asthma from spasm of the bronchioles; aphonia from spasm of the vocal muscles; constipation from spasm of the sphincter ani; or irritable bladder from spasm of the vesical and urethral fibres. The treatment of nervous dysmenorrhœa is rest in bed, massage, electricity, and tonics of iron and arsenic.

CHRONIC OVARITIS.

This woman has been brought to me for a diagnosis of her disease. She is thirty years old, has been married six years and some years ago had one child. After this labor she had a serious leucorrhœa, which I fear was specific in character. She is now suffering from dysmenorrhœa, retroflexion, and backache, and has an irregular body behind the uterus, which feels a good deal like an ovary. Some months ago she was treated at our dispensary for a time, and improved while under treatment; but she afterward relapsed into her former condition, and has now come to be examined with reference to the advisability of having her ovaries removed. She will be etherized, as the examination would cause her considerable pain, and I shall, while she is being etherized, take the opportunity to tell you that the woman upon whom I performed a double ovariotomy two weeks ago, on account of adherent appendages, suffered for awhile with the same character of pain as if the organs were still present. This was a form of neurasthenia, and it lasted only a short time. It has disappeared and she now feels much better than for a long time.

Our patient being now unconscious, I find upon examining her, *per vaginam*, that there is an immovable body in the left broad ligament, which I believe to be the left ovary, that is adherent high up behind the uterus. The right ovary, too, is enlarged and plainly adherent, so that they are both giving her more or less pain and destroying her health.

I shall feel justified in removing her ovaries under these circumstances, if she desires to have the operation done after I have explained to her the results. I tell women in these cases that they will probably gradually lose in a measure their sexual feeling, although it will not cause in them so much difference as castration does in the opposite sex. The popular idea, that if a woman has her ovaries removed her voice will change and hair will appear on her face, is a mistake. Such changes do not take place when the ovaries are extirpated after puberty.

It has been stated that in fifteen per cent. of the cases of oöphorectomy there is a loss of all sexual desire. It is difficult, however, to arrive at the true statistics, because women do not like to be approached on this subject. It is often the case that many women, after having their ovaries removed, will have for awhile greater sexual desire than they had felt for a long time. This is because the ill health, resulting from the long ovarian suffering, has been cured by the operation. But in a few years' time there will be a lessening of sexual feeling, and in some a complete loss. In the opposite sex after castration the sexual desire may remain for some time, also the power of erection and of ejaculating a prostatic fluid, which, of course, contains no semen. Analogous sexual capacity is observed in oxen, in geldings, and in other altered animals long after castration.

ORIGINAL ARTICLES.

CARBOLIC ACID GANGRENE.[1]

BY RIDGELY B. WARFIELD, M.D.,
OF BALTIMORE;
CHIEF OF CLINIC TO THE PROFESSOR OF SURGERY, UNIVERSITY OF MARYLAND; SURGEON TO THE BALTIMORE GENERAL DISPENSARY.

WHILE the escharotic action of strong carbolic acid is well known and molecular death of soft tis-

[1] Read before the Medical Journal Club, March 22, 1890.

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sues may undoubtedly be brought about by this agent when employed in too strong solution or for too long a time, death in mass produced in the same manner seems to have been observed very rarely. I am fortunately able to add another to the few cases already recorded.

The literature of this subject dates only from the end of December, 1888, at which time Dr. Max Kortüm,[1] of Schwerin, published a short article detailing two cases of gangrene produced by the action of dilute carbolic acid continuously applied on compresses for some hours, to fingers which had received inconsiderable injuries. The first case was that of a young woman who, thinking she had a beginning felon, applied through the night a compress wet with an eight per cent. solution of the acid, which by morning had produced a blackening of the surface corresponding to the area covered by the drug and which developed into a sharply circumscribed gangrene. The slough separated slowly and, after some months, the patient recovered with a disfigured but useful finger. The second case described by this author, while less typical than the first, illustrates the same points, and the article constitutes the first record of this singular lesion. On May 8, 1889, M. Monod[2] presented to the Surgical Society of Paris a case of digital gangrene in a woman whose finger had been for some time in contact with a very strong solution of the acid. The gangrenous part was intensely black. At the same meeting M. Quénu reported two cases of a similar lesion, one complete, the other partial, both following strong applications of the acid on compresses. There were mentioned also, without detail, several analogous cases by Messeurs Kirwisson, Terrier, Nicaise, Legroux, and Le Dentu. The last observer, who reported three cases, speaks of the sharply circular appearance of the gangrenous part and the tendency toward retraction on healing. Billroth[3] in a letter written in August, 1889, also mentions that he has seen on four occasions gangrene of the fingers following the local use of carbolic acid, but gives no description of his cases. Dr. Emile Müller,[4] of Strasburg, reports two cases of gangrene of the index finger, following the use of dilute solutions applied for a considerable time. His first case was a boy of twelve years. For a slight punctured wound under the nail, the child's mother had wrapped the part in lint soaked with a two per cent. solution of the acid. Some burning pain was experienced on the second day and the finger was found to be much discolored, but the cause not being recognized the treatment was continued until the third day when Dr. Müller was consulted. The gangrenous area corresponded exactly to the extent of the applied lint. The last phalangeal point was exposed, opened, and required subsequent amputation. The second case in a boy eleven years old followed an application of a three per cent. solution of the acid for twenty-four hours to a finger which was the seat of a small punctured wound. At the end of this time the part of the finger covered by the compress was seen to be blistered and blackened and was finally destroyed by the gangrenous process. Dr. Müller expresses the belief that on plain surfaces such results are less apt to be seen, and condemns the use of carbolic acid of whatever strength when applied on compresses encircling the whole circumference of a part. My own case is as follows:

Henry B., an Irish laborer, aged fifty years, intemperate, robust, and without syphilitic or other taint, came to me at the Baltimore General Dispensary about October 1, 1889, with the following history. Four days before consulting me he had caught the end of his right index finger under some heavy body, with the result of producing a slight contused wound about the nail. By the advice of a friend, "to take out the soreness," he had applied to the finger, first wrapping it in lint, some strong carbolic acid solution, entirely saturating the dressing. At first he had felt considerable pain but afterward the finger became quite comfortable and the bandage was allowed to remain undisturbed over night. The following day the pain becoming acute and constant, the dressing was removed and the whole surface seen to be blackened and inflamed. Vaseline was then freely applied to the injured finger and used constantly until the patient came to me. On examination I found the following condition. The right index finger from its extremity to midway between the metacarpo-phalangeal and first phalangeal articulations on the dorsal, and to the first phalangeal articulation on the palmar surface, was the seat of general gangrene. The affected area was intensely black, embraced the whole contour of the finger, and was sharply separated by a beginning line of ulceration from the healthy tissue beyond. There were no signs of systemic infection, no apparent lymphatic involvement, and beyond a little œdema of the dorsum of the hand the surrounding parts were normal. An occasional poultice was ordered to encourage the separation of the necrotic mass, and every second day the part was irrigated with a mild solution of bichloride of mercury and dressed with iodoform ointment. Under this treatment the case progressed satisfactorily but slowly, the patient being under observation until the end of December, at which time he was discharged with a stiff and rather deformed finger, which was without a nail and covered with cicatricial tissue.

[1] Ueber Karbol-Nekrose, Max Kortüm, Internationale Klinische Rundschau, No. 52, 1888.

[2] MM. Monod, Kirwisson, Terrier, Nicaise, Legroux, Le Dentu: Le Semaine Médicale, May 15, 1889.

[3] Lancet, August 31, 1889.

[4] Gazette Médicale de Strasbourg, November 1, 1889.

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Including my own I have been able to collect from all sources some account of twenty cases of carbolic acid gangrene. Most of these cases have been only mentioned, not described. Of but six have any detailed accounts been given, the best reports being those of Drs. Kortüm and Müller. It is noteworthy that in the cases described by these observers the gangrene was produced by solutions not stronger than eight per cent. and in one case only two per cent. The carbolic acid employed in Monod's case is mentioned as having been very strong and in my own was, I suspect, not weaker than fifty per cent. Of the remaining cases we have no record on this point. All the reported cases forcibly illustrate the possible bad results which may follow the careless or ignorant use of this so-called antiseptic agent.

A reason for the production of this interesting lesion has yet to be found. Kortüm citing the observations of Neill[1], of Edinburgh, upon the action of carbolic acid on the peripheral nerves, and referring to the well-known local anæsthesia produced by the agent, concludes that in association with this action trophic changes may be brought about in the nerves underlying the applied drug and, as a consequence, the local death follows. The fact that the gangrene has been seen only in the fingers where peripheral nerves are abundant may favor this view. Of even more interest is the fact that a complete envelopment of the circumference of the finger seems essential for the production of the gangrene. In explanation of this peculiar feature I have no theory to advance. In conclusion we may say: 1. That carbolic acid applied to a skin surface may bring about rapid death of the part. 2. That the gangrene thus produced is always sharply circumscribed and corresponds to the skin area in relation with the drug. 3. That this gangrene is apt to be produced only when the entire circumference of the part is in contact with the destructive agent. 4. That the strength of the solution employed seems to be of less importance than the length of time of its application. 5. That the employment of a strong solution of carbolic acid to the whole circumference of an extremity should be condemned as should also that of even a very dilute solution when continued for a considerable time.

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THE TREATMENT OF CARDIAC ARHYTHMIA DUE TO DISEASE OF THE KIDNEYS AND VASCULAR SYSTEM.[2]

BY JOSEPH M. PATTON, M.D.,
OF CHICAGO, ILL.

THE title of this paper is not entirely satisfactory to me, inasmuch as the therapeutical methods adopted are such as do not affect the heart directly, and while cardiac arhythmia is at times the most prominent symptom, it is symptomatic of trouble elsewhere, and does not depend alone on organic changes in the heart, even though such be present. Still, as these measures relieve the irregularity of the heart the title employed may be excused.

Cardiac arhythmia is a wide subject, and I wish to speak only of that form which is caused by chronic disease of the kidneys, and is generally associated with more or less arterio-sclerosis, principally affecting the medium-sized and smaller arteries.

The kidney and vascular changes are extremely interesting, but a thorough consideration of them is not the object of this paper. Three conditions of the kidneys and vessels have been described by Delafield, viz., *chronic congestion*, *chronic inflammation*, and *chronic degeneration*. The arterial changes consist in more or less irregular thickening of the middle coat of the vessels.

These changes are found in persons of middle life or over, are usually associated with chronic rheumatism or with a rheumatic diathesis, and may or may not be associated with valvular lesions and their sequences. Arhythmia from the latter cause presents various forms, is not so spasmodic in character, and not so severe, unless it be in an advanced hyposystolic condition of the heart.

The patients are subject to spasmodic attacks of arterial contraction, which greatly increases the work of the heart, and it is at such times that the cardiac arhythmia presents itself. The attacks are characterized by partial suppression of urine, irregularity of the heart, dyspnœa, passive congestion or œdema of the lungs, and all the signs of cardiac failure.

The urine may not vary much from the normal, the specific gravity being between 1010 and 1030, usually about 1020; albumin or casts may or may not be found, depending on the character and extent of the kidney lesion. At the time of the attack the urine will be scanty and high colored, albumin will generally be found, also casts, if the kidney lesion is far advanced. In many instances our first acquaintance with the patient will be occasioned by the onset of one of these attacks; he may have been under medical care for other ailments and the ordinary lesion escape attention until an attack of arhythmia and dyspnœa leads to investigation.

We find the patient with a more or less irregular heart; in mild attacks the rate may not be much increased; in severe attacks, especially when degeneration and dilatation of the heart have been produced, the rate may be very much accelerated, and the heart gradually passes to a condition of asystole. In those unpromising cases where, from the duration and progression of the heart and kidney lesions combined, recovery is impossible, the arhythmia be-

[1] Edinburgh Medical Journal, June, 1886.

[2] Read before the Chicago Medical Society, March 17, 1890.

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comes more pronounced until conditions of *delirium cardis*, and finally *tremor cardis*, are developed precedent to a fatal termination.

As all manner of disease of the heart may be associated with chronic disease of the kidney, it is important to determine how much of the ataxia of the heart is due to a hyposystolic condition of that organ, and how much to an increased demand for work. In those cases where the heart has undergone change as a result of chronic endocarditis, it is not always easy to place the responsibility for the arhythmia; here failure of compensation which has arisen from cardiac disease and its accompanying arhythmia will be associated with ataxia of the heart from nephritis and arterial contraction, and to define clearly the relation of each form to the individual case requires considerable skill and discrimination; yet the success we will have with these cases depends upon our ability to make this distinction.

Leyden, of Berlin, says that the condition of the heart muscle is determined essentially by the tension and frequency of the pulse, the character of the renal secretion, and the degree of dyspnœa.

This is true in conditions which apply to the heart directly, but in the form of arhythmia under consideration this would lead us to wrong conclusions and misapplied therapeutics. We must depend on physical examination of the heart for our information in regard to the condition of the heart-muscle, and on such information will depend the measures directed toward the heart. If actual failure of the heart-muscle is not concerned in the ataxia, the heart tonics are not indicated and may be harmful. The most difficult point, as has been said, is to determine the exact indications for their use. The dyspnœa may be from cardiac asthma, or from diminution of breathing space through congestion and œdema. Generally from a combination of these two causes it is labored in character and is at times extremely distressing. Œdema of the extremities may be present, but is not constant, even in those cases which show some passive congestion of the lungs.

Gastric disturbances usually accompany the attacks of arhythmia and are apt to be caused or aggravated by constipation. For arhythmia due to disease of the kidneys and vessels, the necessity is not to force the heart to work harder, but to give it less work to do. This end is gained by increasing the function of the kidneys and by lessening the tension of the arteries by dilating them. The dilatation of the vessels attains two objects: by furnishing a larger channel for the blood it diminishes the work of the heart, and thus it allows the *vis a tergo* of the heart to reach the kidney circulation and diuresis is increased, with the elimination of materials, which, by their retention in the circulation, may either directly irritate the vessels, or may influence them indirectly through the nervous system. In whatever manner the vascular influence may be produced, a diminished tension cannot be sustained unless the function of the kidneys is carried on.

Of the various medicines used to produce vascular dilatation opium has been most serviceable to me. Nitrite of amyl, trinitrin, chloral hydrate, and the various other drugs used as vaso-dilators, are too transient in their effect. They may be useful temporarily in urgent cases, but not much permanent benefit can be obtained from their use. The bowels should be kept free, the diet light and easily digested, and attention should be given to the condition of the stomach. I have found Husband's magnesia useful in antagonizing the constipating tendency of opium when the latter is used. Such special diuretics as are best adapted to the individual case should be employed. I have usually employed nitrate of potassium and buchu, as this combination has proved satisfactory.

The following cases may be of interest in connection with the foregoing:

CASE I.—Mr. T., aged forty, rheumatic history, had been under my care about a year for organic disease of the heart—mitral stenosis, slight mitral regurgitation, dilatation of left auricle, moderate hypertrophy of right ventricle. Heart constantly irregular from character of heart lesion. Could not bear digitalis, but improved on strophanthus, iron, and anti-rheumatics. He had always been able to come to my office. I was called to see him one evening; found him sitting in a chair unable to lie down; great dyspnœa; heart so irregular that rhythm or pulse-rate could not be determined; urine scanty, dark, and contained albumin; some congestion and œdema of posterior inferior portions of lungs, particularly the left side. Gave him citrate of potassium and caffeine, which is particularly recommended by Dujardin-Beaumetz in such conditions of the heart, without relief. I then gave him 5 drops of tincture of opium with nitrate of potassium and buchu, every four hours; also 12 drops of tincture of strophanthus three times daily. This was followed by immediate improvement. This treatment was continued as the indications required and in a few weeks afterward he walked a distance of two miles to my office.

In this case there was arhythmia, due to the spasmodic attacks of arterial contraction added to that usually present, and due to the organic changes in the heart,

CASE II.—In the fall of 1889 I was called at midnight, in consultation, to see Mrs. T., aged fifty-five. She was suffering from severe dyspnœa. The heart was irregular, hypertrophied, degenerated, and slightly dilated; its action was weak. The lungs were slightly œdematous, and there was a small amount of fluid in the pleural cavities, a few ounces

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of which had been removed in an attempt to relieve the dyspnœa. The urine was scanty; had not been recently examined for albumin, as her physician had not apprehended serious trouble from the kidneys. She was given morphine and diuretics. The urine showed quantities of albumin. She improved sufficiently in a week or ten days to be about the house, the dyspnœa being immediately relieved. The kidneys, however, were so seriously diseased as to be unable to perform their function, and she gradually developed uræmic coma and died in three or four weeks.

Case III.—In February of this year I was called to the country in consultation to see Mrs. P., aged sixty, a sufferer from chronic rheumatism, having but partial use of her lower extremities. I found her suffering from dyspnœa, unable to be out of bed and obliged to assume a sitting posture most of the night in order to breathe. She had just recovered from an attack of *la grippe* characterized by a severe bronchitis. The heart was very irregular and hypertrophied, but the muscle was in fair condition; the urine was scanty, dark, and contained albumin. She was given nitrate of potassium, buchu, and 5 drops of tincture of opium four times daily. A week later her physician wrote me that she was up and about the house.

Case IV.—About four weeks since I was called to see Mrs. O., aged seventy. She had been suffering for a week from severe dyspnœa, and had been treated for asthma without relief. She was unable to lie down or to walk across the room, very somnolent, stomach irritable, heart very irregular and slightly enlarged, but otherwise in good condition. Lungs œdematous, legs also quite œdematous, one having been moderately so for years because of varicose veins; urine scanty and containing a small amount of albumin, but no casts. She was given diuretics with 5 drops of tincture of opium four times daily. Stomach improved, bowels kept open. She was fed on milk and beef-peptonoids. In two days the albumin had disappeared from the urine, dyspnœa was relieved, pulse considerably improved. In four days she could sleep quietly all night, œdema of feet and lungs had disappeared and pulse was perfectly regular and of good volume. Could go down stairs for her meals. She returned home at the end of a week, and now, at the end of a month, writes me that her health continues in a very satisfactory condition.

237 South Hoyne Street.

INTESTINAL SURGERY.[1]

By BENJAMIN T. SHIMWELL, M.D.,
of Philadelphia.

Intestinal surgery was dormant for years, until Senn, of Milwaukee, by his brilliant experiments gave it an impetus. What was the aim of his work? Not to increase the complexity of an operation already difficult, but to lessen the time required, and to make the result more certain. In his footsteps follow others, each adding his mite, until in time we will see a perfect operation.

The object of this paper is to give the results of some experiments on a large number of dogs: results that are good and bad, as shown by repeated trials. These operations or experiments were made on dogs irrespective of age, size, or condition. No preparatory measures were taken to increase the chances of the operation, and they were fed up to the time of being placed on the table. As the manner of operating is now generally understood by the profession, I do not propose to describe the technique, but to discuss certain conditions that seem to me of paramount importance in the successful performance of this work. Starting on the premise that the operation is known, I will take up each point separately.

Senn's plates are objectionable on account of the difficulties in making them. The sawing of the bone to the proper size; the decalcifying, which takes at least seven days; the drying under pressure; the filing and trimming; the boring of the ligature-holes and the opening to allow of the passage of fæces, and the arrangement of the ligatures, consume considerable time and labor. There is no question that they give a larger approximation surface, but this is not an important factor. They are not easily handled, and, as but two ligatures are passed through the bowel, there is not the same facility in tying the end ligatures that there is in tying those of the sides.

Abbe's catgut rings, while theoretically good, are practically imperfect. They require time in the preparation of the catgut and in the making of the ring. They are then put under pressure in alcohol until used. The advantage claimed for them is that they are absorbed or disintegrated, and are easily separated and removed. This is not so, for I have found the catgut practically unchanged and passed from the anus entire, or remaining in the proximal portion covered with fæcal matter, and acting as a foreign body. Like Senn's plates, they cannot be made in an emergency. They are also objectionable on the ground that when removed from the alcohol and the pressure of the glass plates, and placed in carbolic solution, they twist and become difficult to manipulate. Then the fact of having six ligatures in each ring makes the tying of the proximal ligatures a difficult matter.

After faithful trials, I found that the simplest and most perfect ring is that of Brokaw, which can be rapidly made and used immediately. It is made by taking a piece of rubber tubing two and one-half or three inches in length and threading it with catgut, which is tied at the end, converting the tubing into a ring. The ring is fenestrated to allow of the attachment of four ligatures to the catgut. This takes but a few moments, and the rings are easy of manipulation. They are compressed into a straight

[1] Read before the Philadelphia County Medical Society, March 12, 1890.

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line, introduced into the bowel through the incision, and then turned on the flat. The four sutures are passed through the bowel wall, and easily tied. Firm approximation is secured, with sufficient surface to furnish strong union. The catgut used in threading the tube should be unprepared and as fine as can be obtained, in order that it may be disintegrated readily. Non-disintegration with retention has occurred in two cases. The silk ligature is the safest and most easily handled. Catgut is unreliable; the knot has a tendency to slip, even when the utmost care is taken, making the approximation unsafe. The objection raised that catgut is absorbed too soon, is not well founded. If the catgut is well prepared in oil of juniper for twenty-four hours and kept in alcohol, sufficient resistance is given it to keep the rings in place until union is firm. The finer the silk, consistent with strength, the better the approximation, as too heavy silk prevents coaptation. The knot can be tucked under, which allows the bowel surfaces to lie together outside the knot. After the ligature is passed through the bowel, and before tying, it should be washed with bichloride solution. The passage of the invagination sutures is an important matter, as there is a tendency on the part of the invaginated portion to be everted by the contraction of the mesentery and bowel walls. It is a matter of vital moment to prevent the occurrence of this accident. I do not know that any one would pass the sutures directly through the walls of the invaginated portion, still the temptation exists. To see what would be the outcome of this, I tried the experiment on twelve dogs, passing the continuous sutures directly through the walls and over the end, by which the part was firmly secured. In every case ulceration took place in the suture tract, and the dogs died in twenty-four hours, apparently from shock. The proper method is to pass the suture through the serous and muscular coats and over the end to the other side, and repeat. The mesenteric side should be sutured first, and a moderately firm knot tied. The invaginated end will be nicely rounded and the sutures completely covered by plasma in a few hours; I do not know the exact time, but dogs killed as early as the eighth hour have shown this condition.

Reliable works on surgery, and some of the experimenters in this work, suggest the division of the mesentery from the bowel at the point of invagination. Treves and Greig Smith lay stress on the non-division of the mesentery at this point. This separation has been suggested to prevent retraction of the mesenteric side of the invagination. I tried this on twenty-four dogs, dividing the mesentery from the intestine at the point of invagination, and finishing the operation as usual. In every case gangrene of the intestine occurred, showing that the vitality of the bowel is entirely dependent on its mesenteric blood supply at the point of attachment. The contraction and retraction of the bowel after division would be sufficient to cut off the blood that could come from a distant point. This was so positive that I then inverted the mesentery into the lumen of the gut along with the walls. I then passed the first invagination suture through the mesenteric portion. The securing of this is absolutely necessary, for the mesentery contracts to a considerable extent, as is very noticeable in operations where a free invaginated portion is left. In such cases there is a marked concavity toward the mesentery, and if the specimen is seen some time after the operation, it will be found that the free end has been drawn down to some adjoining portion of gut, lying in close apposition, but not attached, except by the contracted mesentery.

When we consider special operations, the value of this method is readily appreciated. Take, for illustration, a gastro-duodenostomy. I have done this by two methods. First by simply incising bowel and stomach, passing the rings, scarifying the surface and then approximating the parts and tying the sutures.

In some cases, I have passed additional interrupted sutures; perfect union resulting from both methods.

The other form of operation was done after the method of Dr. Weir, of New York. The duodenum and stomach were brought together at the site chosen. They were then pinched up and a continuous catgut suture passed through their serous and muscular coats. This formed the posterior attachment of the union. After doing this, the duodenum was incised, the ring inserted and sutures passed. The stomach was then treated in the same manner, the surfaces were scarified and approximated, and the sutures tied. The catgut from the posterior wall was then carried around the sides and the anterior attachment. This is an excellent method; the parts are not only supported and injury by dragging prevented, but extravasation is not likely to occur. When the posterior suture is passed, it is important that it is placed well toward the mesenteric surface of the bowel, so that when contraction takes place, enough approximation surface is left to give good union, besides preventing narrowing of the new opening and union of its divided wall. In the human subject, I would be inclined to give the preference to Senn's bone plates, as they by their rigidity would prevent union of the divided walls. By the contraction of the stomach and duodenum the rubber rings are compressed, the divided surfaces meet, and stenosis may result. The difference in time of these two operations is marked; the first is completed and

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dressed in thirteen minutes; the second takes twenty-five minutes. Though time is a factor, I think it will pay for the spending. The prognosis is exceedingly good. I performed six gastro-duodenostomies, with five recoveries. In the case that died the post-mortem did not show the cause of death, and as the union of the duodenum to the stomach was perfect, I think it would be fair to class it with the recoveries.

The next operation to which I wish to call attention is ileo-colostomy. This is performed by two methods, viz.: Approximation and implantation. Brokaw has modified the implantation; his operation being an implantation with approximation. In approximation two rings are used, one in the colon, the other in the proximal portion of the ileum. This is a rapid method but not the safest, as extravasation is apt to occur. This can be prevented to a certain extent by additional interrupted sutures, but with Senn I am forced to believe that it is not a safe method. Implantation has given me the best results; every case operated upon terminating favorably. The risks of extravasation are either prevented or reduced to a minimum, though I think it is a safer plan to place a few extra sutures between the original sutures. This operation I have always done with catgut.

Brokaw's modification possesses no advantage over Senn's method, either in security or time, and has one disadvantage—the possibility of obstruction. Brokaw uses two rings, one in the colon, the other in the ileum. The ring used in the ileum must be of such a size that it will not impinge too firmly on the mucous membrane. For this reason it must be exceedingly small when the ileum is of small calibre. Thus the lumen of the ring is so narrow that fæcal matter cannot readily pass through, and as the catgut does not always disintegrate, the ring acts as a foreign body, for it cannot pass unless unfolded. I performed only one operation by this method. The dog was small, consequently the ileum was small and the ring in proportion. The dog did well, was placed on the floor on the third day and took care of himself. But the bowels refused to move, and on the eighth day he sickened and on the eleventh died from obstruction. The post-mortem showed perfect union, the ring *in situ* and the catgut still firm. The bowel above was entirely filled with fæcal matter. If the catgut had disintegrated the ring would have passed and the dog's life would have been saved. This to me seems the great objection to the method. In an adult, where the ileum is larger, a better result might be possible.

Through circumstances, I came into possession of a bad lot of silk, but, as good may come from evil, I have been able to prove a fact that is of the utmost importance. In performing these operations, the ligatures broke in eight cases, with seven deaths. In each case everything was tried to remedy the accident but without success. Catgut ligatures were passed through ring and bowel and tied to the remaining ligature. Interrupted and continuous sutures were tried with no satisfactory results. It is too late to replace the ring after one, two, or three of the ligatures have been tied. What occurs when the ligature breaks? After division, the bowel contracts to one-third or one-half of its diameter. The rings are introduced, the ligatures are being tied, putting the bowel on the stretch, a ligature breaks, the bowel is slightly ruptured, retraction takes place and the opposing surfaces are drawn out of relation. To illustrate: if it is the last ligature that breaks, as the other three are tied, the ring is firmly applied to the bowel walls at their points of union. The part remaining ununited by the broken ligature leaves that portion of the bowel unsupported; then, when contraction of the bowel or peristalsis occurs, the position of the ring changes with the bowel, and fæcal matter can be forced through the intervening surface of the non-supported part. The peculiarity of the colon in being subject to tenesmus when interfered with, keeps up the strain on the point of approximation. I am inclined to believe that it is the tenesmic action of the colon that makes ileo-colostomy by approximation unsafe. All these cases of broken ligature, excepting the eighth, were operations for ileo-colostomy. The eighth occurred while doing a jejunostomy. The bowel was secured by interrupted sutures carried well beyond the ring approximation, and retaining the ruptured suture tract inside. This case recovered. The only theory that explains recovery is based on the mobility of the small intestine. If peristalsis or retraction occurs, there is sufficient mobility of both parts to prevent severe strain. In ileo-colostomy the colon is fixed by its mesentery and the ileum is free to the length of its mesenteric attachment; then the movement is not uniform, and the strain must be on the approximation. What is the remedy? The only thing that can be done is to remove the portion of the ileum operated upon and to insert a new ring into the colon, being careful to pass the sutures well beyond the former sites. So confident am I of the result of this accident, that if I were to operate on a human being, I should have two sets of rings and if a ligature broke I should do as I suggest.

It has been advised to unite the small intestine in its natural direction. To me, there is an objection to this mode. When division of the bowel has been performed, and the ends invaginated, the convex surfaces are to be united. As the axes of the two portions are the same; to approximate these

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surfaces it must be done at the expense of the mesentery. The two ends of the bowel must be moved side by side in opposite directions in the line of the axis, to the point of approximation; this is a loss of mesentery to the extent of four or six inches by overlapping. Then to bring these together, the two portions of bowel must be rotated on their long axes to bring the convex surfaces together. This shortens the mesentery. As the mesentery always contracts in these operations, a further shortening of its length occurs, thereby lessening the freedom of action. This is not of much importance when the mesentery is long; but, if it is short, it may give rise to annoyance. In my operations I have always folded the two ends on themselves like the leaves of a book, and attached the convex surfaces side by side. The mesentery is not interfered with, and its length is preserved; the ends of the bowel beyond the point of union rounding off and contracting until only a knuckle is left.

Senn advises scarification of the surface before approximation; by this rapid union is obtained by exudation from the irritated surfaces. Dr. Davis, of Birmingham, Alabama, suggests denudation of the peritoneal surface, and reports a number of cases to show its advantage over scarification. While not decrying his method, complete scarification will give quick union. A specimen of gastro-duodenostomy, which was removed fifty hours after operation, shows that union had taken place at a much earlier period than Davis says is possible. I have removed specimens in twenty-four hours that showed good union which would prevent fæcal extravasation. My results lead me to suppose that the strength of the union depends entirely on the thoroughness of the scarification. I used two needles fastened in a cork; these irritated the surfaces sufficiently without producing bleeding.

Contrary to the experience of other operators, there was persistent vomiting in every case (excepting the gastro-duodenostomy), which lasted from twenty-four to seventy-two hours, and during this time no food would be voluntarily taken. Milk and lime-water, for at least seventy-two hours, was all the nourishment they received, and this was always given by force. Meat they would not swallow. I thought this was due to the confinement in the apparatus; but when, after thirty-hours, they were placed on the floor everything but water was still refused. The location of the operation did not seem to influence the vomiting. The cases of gastro-duodenostomy retained all food given, and caused less trouble than any of the other operations.

The only thing noticed in reference to the urine was in the operations upon the colon, and in these strangury was always present—as many as thirty-six hours passing without voiding urine. Strangury may be present in any abnormal condition in the colon, and shows itself in operations on the part.

The bowels were not moved in any case before the fourth day. The rings were passed at that time if the operation was low, or later, according to location. The cessation of defecation is evidently due to the local paralysis produced by the interference, as the lumen of the bowel is perfect at the point of anastomosis. The dogs received no preparatory treatment, and in no case was any medication resorted to after the operation.

In conclusion, I wish to give some reasons for special treatment of the omentum after laparotomy. In every operation that requires abdominal section, the omentum receives more or less handling, at times with considerable roughness for such a delicate tissue. In making the post-mortems I always found one of two conditions existing. The omentum was either attached to the intestine at the point of operation, or contracted and more or less adherent to the upper portion of the abdomen. Therefore, by these conditions the functions and anatomical relations of the omentum were lost. In my later operations I passed the first one or two abdominal sutures through the omentum and brought them up to the line of incision when the abdomen was closed. By this I not only retained its relation, but I attached it to the cicatrix. Hernia after laparotomy is one of the sequelæ, and possibly it could be prevented by this method; for, in making the post-mortems, I have found it more or less difficult to tear the omentum loose even as early as the eighth hour after operation. When made later it not only showed the attachment to the cicatrix in good condition, but also that to the adjoining parietal peritoneum. By this the abdominal cavity is shut off from outside influences in a few hours.

Summarizing the points of this paper, they show:

1. The advantage and disadvantage of special rings.

2. The value and security of silk over catgut as a ligature.

3. The manner of passing invagination sutures, and the necessity of securing the invaginated portion to prevent retraction.

4. The danger of division of the mesentery, and the manner in which it should be treated to make the operation successful.

5. The two methods of performing gastro-duodenostomy, and the advantage of Weir's operation over simple approximation.

6. In ileo-colostomy the values of approximation and implantation, and the possible disadvantage of Brokaw's modification.

7. The danger from breaking of ligatures while performing approximation, and, in such cases, the necessity of repeating the operation.

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8. The manner of uniting the small intestine, and its influence on the mesentery.

9. The use of scarification or denudation of the peritoneal surface to secure prompt union.

10. The persistent vomiting in all cases except gastro-duodenostomy.

11. The strangury in low operations.

12. The time between the operation and defecation, and the passage of the rings.

13. The treatment of the omentum, and its possible importance in laparotomy.

CLINICAL MEMORANDA.

SURGICAL.

Sloughing of the Gastrocnemius following Amputation in a Diabetic Patient.—The patient, a man aged sixty-two years, had suffered for twelve years from diabetes, the amount of sugar varying greatly and being absent when the proper dietetic rules were followed. On September 5, 1889, the day after a long tramp in the mountains, he noticed four blisters forming on the toes of the right foot. Two were on the outer side of the little toe, and one each on the outer side of the two adjoining ones. The accompanying pain was great, and was increased by a depending posture. On the following day the same conditions existed, but were aggravated. The blisters were opened, allowing a bloody serum to escape, and leaving ulcers with black bases, but with no distinct line separating them from the healthy tissue. At this time sugar was present in his urine. In the course of four days it was possible to make a positive diagnosis of dry (or perhaps better here, diabetic) gangrene.

On October 22d a well-marked line of demarcation existed, showing the diseased area to be the outer two-thirds of the foot extending from the articulation of the os calcis and cuboid downward over the metatarsal bones, but not including the great toe. At this date an amputation was done at the junction of the lower and middle thirds of the leg, with lateral flaps, the usual antiseptic precautions being taken.

It was noticed during the operation that the anterior surface of the gastrocnemius was of a dark blue color, as though bruised, while the soleus was of a normal color. From the immediate effects of the operation the patient rallied well, but in five days the flaps had sloughed, excepting the central portion over the tibia. Later a portion of this also sloughed, exposing an area of the tibia about one inch in diameter. This all granulated with the exception of a small portion on the outer side, from which were daily taken shreds of necrosed material, probably part of the aponeurosis.

About January 10th he had an attack of influenza, which left him much exhausted, and following it all the inner part of the stump became red, swollen, and very painful nearly to the knee, and in another week this condition extended above the knee on the inner and posterior aspect. Over the lower portion of the swelling a vesicle formed, with a black base and distinctly marked edges. Beneath this, pus was detected. It was freely opened. Large pieces of necrosed material would plug the opening, and were removed, only to be followed by others. Two fragments the size of the thumb came away, besides many smaller ones. Above the knee over the inner head of the gastrocnemius a free opening was made ten days later, and from this also many shreds were removed. The two openings communicated. The superficial structures were not involved in the sloughing process and apparently the outer head of the gastrocnemius was not affected. The stump is now very thin and pointed, showing plainly the absence of the muscle.

Before the attack of influenza his urine contained no sugar, but when the sloughing began sugar appeared to the extent of nine-tenths of one per cent. At present sugar is absent.

Large quantities of morphine were used during the course of the case, which may have accounted for the disappearance of the sugar.

CASPAR W. SHARPLES, M.D.
EUGENE, OREGON.

HOSPITAL NOTES.

INDURATING ŒDEMA. PAPULAR AND ULCERATING SYPHILIDES. LUPUS ERYTHEMATOSUS. TINEA TONSURANS.

Abstract of a Clinical Lecture delivered at the New York Post-Graduate Medical School.

BY ROBERT W. TAYLOR, M.D.,
PROFESSOR OF DERMATOLOGY.

CASE I.—The first case to which Dr. Taylor directed attention was a man, forty-nine years of age, who having had an erosion on the foreskin for some weeks, had connection with a woman about seven months ago. Five weeks after this intercourse a hard nodule appeared upon the erosion, and a second nodule about one month later. Eight weeks ago the penis and scrotum began to swell, and at the end of two weeks they had become so enormously swollen that he entered Bellevue Hospital, where an attempt was made to relieve the phimosis by a dorsal incision of the prepuce. Subsequently the swelling was reduced slightly by the application of leeches to the penis. The true condition of the patient had not been recognized when he first came under Dr. Taylor's observation at Charity Hospital about six weeks ago. At this time the swelling had existed for several weeks, and the patient was very anæmic. He was put to bed and given mercurials and tonics. The swollen scrotum was about as large as a cocoanut, and the penis correspondingly large. There was no succulence of the tissues, but the prepuce was of a purplish color, and as hard as cartilage, and the phimotic condition was still present. Although the penis was involved in the swelling, the excessively hard œdema was in the prepuce. Circumcision was performed only one week ago and the hardness is markedly less, but there is now no evidence, nor has there been, of inflammatory engorgement or of œdematous infiltration, and the patient has improved rapidly since the removal of the mass.

The erosion on the penis was a good port of entry for the syphilitic virus. He denies having had headaches, sore throat, alopecia, or any rash; but he has undoubtedly had a roseola, a few spots of which still remain; and there is enlargement of the ganglia. The condition presented by this patient is known as "indu-

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rating œdema," and usually begins about the genitals, although sometimes about the face, making its appearance commonly during the first years of syphilis, and upon some primary or secondary localized syphilitic lesion. It is not an accompaniment of any other disease. As this subacute inflammatory quasi-œdema usually affects some primary or secondary lesion of syphilis, the successful treatment of the special condition is necessarily dependent upon the healing of the lesion in question.

This condition of indurating œdema is sometimes complicated by a seemingly erysipelatous condition, in which the parts, although not hot, have a brick-red color which may extend for some distance upon the neighboring parts.

This man's scrotum, when pinched between the fingers, is found to be still fully one inch thick.

Treatment.—In male patients the hard œdematous prepuce should be excised, but if this is impossible, the penis must be constantly covered with mercurial ointment. Inunctions of mercurial ointment should be made to the scrotum with the greatest caution, for they are very liable to cause inflammation and even gangrene. It is better, therefore, to follow such inunctions by the application of an evaporating or lead lotion.

CASE II.—The next patient was a woman, twenty-two years old, with indurating œdema of the right labium majus. She gave a history of having had a sore on the inside of the vulva, a slight eruption, abundant alopecia, nocturnal headache, and other symptoms of syphilis. About sixteen weeks ago, the right labium began to swell, and ultimately reached the size of the fist. In the course of a few weeks, sores appeared on these parts but disappeared after a short time. The present sores began as pustules about the size of a pin's head, and by infection with micrococci which entered through the hair follicles, the warty looking ulceration now present was produced. This, however, can only be regarded as a complication developed upon a much hypertrophied labium majus.

Treatment.—As the mass cannot be removed in this case, it is important to observe the strictest cleanliness of the affected and neighboring parts, to avoid all sources of irritation, and to envelop the whole mass in a twenty-five per cent. mercurial ointment applied on lint, both inside and outside of the vulva. By the use of sitz baths at 101° F. containing some sal soda for its cleansing action, the circulation of the parts is accelerated, and the tissues softened and rendered more amenable to the action of the mercurial.

CASE III.—The next patient, a man forty years old, was admitted to the hospital twelve days previously, but did not develop the present eruption until six days later. He stated that twenty-seven days after connection, a sore appeared on the end of the penis and extended into the urethra. The period of incubation of syphilis is subject to considerable variation, the shortest time being about ten or twelve days, and the longest from sixty to seventy days. The longest period of incubation observed by Dr. Taylor was sixty days in two trustworthy cases, but Fournier says that he observed one of seventy days' duration.

This patient shows general enlargement of the glands, and presents an eruption which is general in its distribution, and consists of small, flat, smooth papules, which are by no means florid in color, but of a decidedly pinkish tint. This is the first week of the eruption, and therefore it is not copper colored, or of the tint of lean ham. The congestion must be of longer duration, and the pigment changes more advanced before the characteristic appearance will be present. Later on, the eruption will also be scaly. The patient complains of great itching, and the cause of this is to be found in such subjects usually in the general condition of the system, or in the presence of pediculi in the clothes; for, as a rule, syphilitic eruptions do not itch.

Treatment.—Whenever one has to treat these localized infiltrations of syphilitic material called papules, tubercles, etc., it is better to bring the medicine in contact with them by means of inunctions, rather than by the roundabout method of administering mercurials by the mouth. By the employment of inunctions, gastric irritation is avoided, and an opportunity offered for the administration by the mouth of suitable tonics. In carrying out the treatment by inunction, take different regions of the body on successive nights, giving about one inunction in each week to lesions of the head and neck.

CASE IV.—This woman, thirty-eight years of age, has been syphilitic for six years, and consequently presents lesions of a more advanced stage of the disease. Her first eruption, she says, began with small papules about the face, and since then, the eruption has returned almost every year. About the shoulders and clavicles, under the right breast, and in several other places about the head and neck, and behind the ears, are to be seen infiltrated nodular patches, which are in places ulcerated. These lesions present an admirable illustration of what is known as the "ulcerating tubercular syphilides." Two forms of syphilitic tubercles are found—the ulcerative and the non-ulcerative form; and this patient presents illustrations of both, chiefly the former, however. She is pale and anæmic, and the lesions from which she suffers show a strong tendency to degeneration. The cause of these degenerations of tubercular syphilides is two-fold: (1) The inherent tendency in a tissue of low grade, like syphilitic material, to degenerate; and (2) the opportunity presented by the low grade of vitality of these tissues for the entrance of pyogenic bacteria or micrococci. In other words, these degenerative changes are brought about either by a general systemic infection through the syphilis, or a local infection by micrococci of the products of this general infection.

Then again we must remember that the syphilitic neoplasm is a young and rapidly growing granulation material, but one possessing little vitality, and that the small cells accumulate around the bloodvessels from which they are effused, and when their number is so great as to compress the bloodvessels, strangulation and ulceration follow.

The pyogenic bacteria lodging upon a skin infiltrated by syphilis, and having its nutrition seriously impaired thereby, gain entrance perhaps through the hair, sudoriparous, or sebaceous follicles, and finding a favorable soil for their development, form little pustules, which, increasing in size and number, fuse together, producing ulcers. Many, if not all, of the ulcerative lesions of syphilis are instances of this mode of infection. It is

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further evident that the vulnerability of the tissues will be increased in proportion to the general debility of the patient. These facts explain why tubercular syphilides do not always become ulcerated.

Treatment.—In considering the question of treatment, it is important to remember that the mercury only assists by removing the new growth, and, accordingly, the ulcerative condition may remain after the new growth has been absorbed. Hence, the local treatment is essentially an antiseptic method, and consists in the removal of all crusts, and washing the parts with a two or three per cent. solution of carbolic acid. If it were practicable to cover all such ulcers with the usual antiseptic dressings, the process of healing would be very rapid. Having removed all the crusts and purulent secretions, and secured a fairly healthy condition of the parts, apply an ointment consisting of two drachms each of carbolic acid and mercurial ointment to the ounce of vaseline. Internally, the patient is taking the following prescription:

℞.—Biniodide of mercury	.	2 grains.
Iodide of potassium	.	3 drachms.
Syrup of iodide of iron	.	320 drops.
Simple syrup	.	2 ounces.
Water, sufficient to make	.	4 " —M.

One teaspoonful in water, three times daily.

Case V.—The next patient, a woman of thirty-three years, presents a different form of cutaneous disease from the preceding cases. She is suffering from lupus erythematosus, a disease which is rather more frequent in women than in men, and which usually begins as a little spot the size of a pin's head, situated around a follicle, which is often seen in the centre, and which is plugged with sebaceous matter. From this origin, single or multiple discoid plaques are developed by peripheral extension, usually beginning about the nose, spreading from there to the cheeks, and very often eventuating in an outline reminding one of the shape of a butterfly. It does not, however, necessarily follow this particular mode of distribution. In the present case, the greater portion of the forehead, all of the right cheek as far as the angle of the jaw, and part of the mouth, are involved, with several other patches indicating the multiple origin of the disease. She says that the eruption itches severely. The skin is thickened, reddened, and scaling, and, what is often insisted upon, *i. e.*, thickened, scaling patches, with plugged-up follicles, are not seen, for they have been removed by treatment.

Treatment.—The treatment is largely one of stimulation, and it is evident from the appearance of this patient that this method has been judiciously and successfully followed. The parts may be painted with pure carbolic acid or with tincture of iodine. Dr. Taylor prefers to paint with either carbolic acid or iodine, and then to apply over this a coat of collodion, re-applying it as often as it falls off. Some cases are markedly benefited by the vigorous application of the vinegar of cantharides; but care must be exercised not to allow the irritation produced to proceed too far. For this purpose, soothing remedies like the lead and opium lotion, or zinc ointment containing one drachm of calomel to the ounce of ointment, may be used. The patient must also be protected against changes of temperature, and from disorders of the gastro-intestinal tract, which may cause flushings of the face.

Case VI.—Dr. Taylor next brought before the class a boy, ten years of age, who had a typical incipient ringworm on the scalp; the case being rendered more interesting by the fact that his reddish hair made it very easy to overlook the patch of disease. On passing the finger over this patch it felt like sandpaper, owing to the inflammatory hyperplasia in the hair follicles. It is sharply marginated, and, in the upper portion, hairs are scattered which are yet uninvaded by the disease. A little lump just above this patch gives evidence of an extension of the disease, in the fact that the hairs are broken off and lustreless.

Treatment.—In considering the treatment, the question of prophylaxis must first claim attention. The patient must be prevented from playing or sleeping with other children, and others must be warned against wearing his hat or his clothes. The diseased patch should be kept painted with flexible collodion containing thirty grains of chrysophanic acid to the ounce. This application is an energetic parasiticide, and has the advantage of preventing the scales from flying off and so carrying contagion. It is particularly to be commended in small and limited patches of ringworm.

MEDICAL PROGRESS.

Hydrastinin in Uterine Hæmorrhage.—Dr. Edmund Falk (*Archiv für Gynaekologie*, Bd. xxxvii., 2d part) has administered the muriate of hydrastinin to twenty-eight cases of uterine hæmorrhage from various causes.

In three cases of congestive dysmenorrhœa, with excessive flow, the results were most excellent. In one case, five days before menstruation was due, a daily hypodermic injection of about ¼ grain (.05 gm.) was given, and at the beginning of the discharge the dose was increased to 1½ grains. The period lasted but three and one-half days and was absolutely painless, whereas previously they had always been very painful and continued from six to eight days.

In another patient, who for more than twelve years had menstruated twice each month, the flow continuing with great pain from eight to twelve days, menstruation was postponed for three weeks, after beginning the injections of hydrastinin.

In nine cases of hæmorrhage from metritis and endometritis, the treatment was successful without exception.

Four cases in which bleeding was caused by disease of the adnexa, parametritis, pyosalpinx, etc., were also promptly relieved by the treatment.

Nine cases of hæmorrhage from uterine myomata were also subjected to the treatment, with success in each case.

Falk concludes from his studies that hydrastinin is a sure remedy against uterine hæmorrhage; that it is of especial value in cases of congestive dysmenorrhœa, and in menorrhagia in virgins; that in myomata, hydrastinin will control the hæmorrhage; and that the result is less sure in bleeding from chronic metritis, and is very uncertain in cases of neurotic origin.

The author employs a ten per cent. solution of the salt in water, and usually injects half a syringeful (.05 gm.)

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twice weekly. In 500 injections, abscess following the operation was not seen, and rarely any irritation. It is important that hydrastinin and not hydrastin be used, as, according to Falk, the latter is a powerful cardiac depressant.

Unna's Medicated Gelatins.—Unna's gelatins are indicated in superficial inflammatory affections when the skin is swollen, moist, and itchy. Very high temperatures and profuse sweating forbid their use. For a general basis the following formula is given—the figures within parentheses being taken when a hard zinc gelatin is wanted:

℞.—Zinc oxid.	15	(10) parts.
Gelatin	15	(30) "
Glycerin	25	(30) "
Water	45	(30) "

In adding other drugs the following directions may be useful:

(1) White lead, lead iodide, white precipitate, sulphur, iodoform, chrysarobin in fine powder may be mixed in any proportion required. A proportion of five to ten per cent. added to soft zinc gelatin is recommended.

(2) Carbolic and salicylic acid, resorcin, naphthol, creasote, and potassium sulphide may be added to the hard gelatin basis in any proportion up to ten per cent.

(3) Fats, balsams, tars, and ichthyol all make the basis softer. The proportion added is usually from ten to twenty per cent.

(4) If we wish to combine drugs in rules 2 and 3, then the sum of the proportions must be used. For example, if resorcin and salicylic acid were both ordered, we should not prescribe more than five per cent. of each if we wish the gelatin to form a good covering.

(5) Powders may be combined in any proportion.

(6) Tannin, pyrogallol, and oxide of mercury cannot be added to the basis.

(7) Corrosive sublimate up to three per cent., camphor, chloral, and camphor chloral, all to two per cent., extract of cannabis Indica from two to five per cent. may be used with soft zinc gelatin.

The pharmacist is to dispense the different glues in pots, which are to be put in boiling water when the preparation is to be used. It is to be painted on the skin with a long-haired brush.

The diseases of the skin for which Unna's glues are recommended are:

Pruritus.—Zinc glue with extract of cannabis Indica, chloral, carbolic acid, creasote, salicylic acid, camphor, camphor chloral, etc.

Eczema Intertrigo.—Hard zinc glue with ten per cent. of ichthyol or five per cent. of resorcin.

Eczema, with Great Itching.—Two per cent. of ichthyol or five per cent. of extract of cannabis Indica.

Desquamation after Acute Eczema.—Two per cent. of ichthyol or resorcin, five per cent. of sulphur, or one per cent. of salicylic acid.

Wounds and Ulcers.—Iodoform zinc glue.

Acne Pustulosa.—After opening the pustules paint with twenty per cent. sulphur, five to ten per cent. resorcin, or one per cent. bichloride of mercury with or without two per cent. of salicylic acid added to the zinc glue.

The soft zinc glue will form a useful protection to the sound skin near diseased areas to which strongly irritating applications have to be made.—*Medical Chronicle*, March, 1890.

Treatment of Local Syphilitic Manifestations.—DR. G. FRANK LYDSTON gives the following advice upon the treatment of local syphilitic phenomena (*Western Medical Reporter*, March, 1890). In treating the chancre avoid caustics and grease as a rule, and keep the part dry and perfectly clean. The only exceptions with reference to caustics are mixed sores with a minimum of induration, and sores which become sluggish and refuse to heal after induration has nearly or quite disappeared. In such conditions pure carbolic, followed by fuming nitric acid may be applied, but the galvano-cautery preceded by cocaine is better. Iodoform ointment may be used in sluggish or painful sores. The following formula will be found excellent, the odor of iodoform being completely disguised by thymol:

℞.—Menthol	5 grains.
Iodoform	4 drachms.
Spermaceti	2 "
Cerate, sufficient to make	1 ounce.—M.

To be applied on lint. Where there is much pain cocaine and extract of belladonna may be added.

Black and yellow wash are not objectionable for cleansing purposes, provided the part be well dried thereafter and packed with absorbent powder. However a 1 to 500 solution of sublimate is preferable. The effects of the latter may be obtained by washing the part with a weak solution of common salt, and sprinkling with a small quantity of calomel, the two combining to form corrosive sublimate. The best absorbent is the powdered zinc oleate (P. D. & Co.) combined as follows:

℞.—Bismuth subnitrate	2 drachms.
Salicylic acid	5 grains.
Zinc oleate, sufficient to make	1 ounce.—M.

Zinc oxide and lycopodium, equal parts, are also useful.

Cumbersome dressings must be avoided, especially such as require for their retention constriction of the penis.

Pronounced indurations often persist for months without ulceration, or after it has healed. Bathing in hot water, with frictions of oleate of mercury, five per cent., will dissipate them after a time. The easiest and best method is excision. The author recommends excision of all clearly-cut chancres upon the prepuce or integument. Care should be taken, however, never to excise them until they have become stationary, else recurrence is almost certain.

The roseola seldom requires attention; should, however, pigmentation be marked and lasting, hot baths, with frictions of twenty per cent. oleate of mercury will be serviceable.

Papules, tubercles, squamæ, and other dry lesions can be controlled and rapidly resolved by applications of the following formulæ. Care should be taken in selecting the proper strength—blistering may result, which, although beneficial sometimes, causes the patient to lose confidence; there is great variation in integumentary susceptibility. The collodion preparation is the most likely to blister.

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℞.—Corrosive sublimate . . 5 to 20 grains.
Collodion . . . . 1 ounce.—M.

or,

℞.—Corrosive sublimate . . . 5 grains.
Comp. tincture of benzoin . 1 ounce.—M.

Apply with a hair pencil,

Tincture of tolu is also an excellent vehicle.

The results obtained by these preparations are often remarkable. They are of especial value in removing facial blemishes, hastening the removal of pigmentation very markedly.

Crusts and squamæ, if thick, are benefited by applications of ointment of nitrate of mercury. The ammoniated mercury ointment is useful in some instances, but is not often sufficiently strong.

Ulcers require some care. Ointments of iodoform, oleate of mercury, mercurial ointment, citrine and white precipitate ointment, are all of service in different cases. Occasional stimulation with nitrate of silver, or even the acid nitrate of mercury, may be required. Should ulcerations become phagedænic, Ricord's paste or the actual cautery may be used, but pure bromine is preferable. Applications of the potassio-tartrate of iron are useful in some cases—twenty grains to the ounce.

Nodes and diffuse osteo-periosteal swellings may be benefited by frictions of mercurial ointment, oleate of mercury and compound iodine ointment. Good results may be obtained from hypodermics of a solution of bichloride immediately contiguous to the swelling. A blister, followed by mercurial ointment, is often efficacious in disposing of obstinate nodes.

The obstinate headaches of both late and early syphilis, whether associated with cranial bone lesions or not, are benefited by friction of the scalp with oleate of mercury ten per cent. In obstinate cases a blister to the nuchia, followed by mercurial plaster, is quite effective.

Syphilitic iritis is greatly improved by frictions of the brow and temples with the oleate. Care is necessary lest the ointment get into the eyes, as it is extremely irritating. Occasional bathing of the eye in a solution of the bichloride, 1 : 20,000 is of service. In case it becomes necessary to blister the temples, mercurial ointment should be applied to the raw surface.

Mucous patches and fissures of the mouth, if very painful, should not be cauterized until their irritability has been in a measure allayed; they then require cauterization. The best application is the acid nitrate of mercury; in some cases, however, the nitrate of silver is better. Obstinate tubercular lesions and post-ulcerative thickenings should be destroyed by the galvano-cautery, as transformation into cancer is possible.

In irritable oral, lingual, and pharyngeal lesions, the following is the best application:

℞.—Carbolic acid . . . . 10 grains.
Resublimed iodine . . . 5 "
Menthol . . . . . 10 "
Oil of eucalyptus } of each 2 drachms.
Glycerite of tannin }
Boro-glyceride sufficient to make 1 ounce.—M.

Apply with a brush.

Condylomata and mucous tubercles disappear under the collodion or benzoin and bichloride mixture already mentioned. Condylomata and mucous tubercles mean local irritation and filth, both of which are in great measure avoidable. Calomel and oleate of zinc are the best dusting powders for these lesions.

The Treatment of Hemiplegia.—In discussing the treatment of hemiplegia, DR. BASTIAN (*Lancet*, March 8, 1890) writes that while in the apoplectic condition, the patient should be put in a recumbent position in a cool room, the head and shoulders being well raised; and if there is much heat and throbbing about the head, cold applications or an ice-bag should be applied and the legs and feet wrapped with flannel and hot bottles applied. If the face be much flushed, some sedative, such as twenty grains of potassium bromide and four or five minims of the tincture of aconite, should be given to calm the circulation and thus help to check further bleeding. Cases of apoplexy often admit of very little being done in the early stages in the way of direct treatment, because of the great difficulty in diagnosing between cerebral hæmorrhage and incipient softening due to thrombosis. Some physicians are apt to think—and the less experienced they are the more they are apt to think—that hæmorrhage and incipient softening are diagnosed very readily; that there is not, in fact, much difficulty in distinguishing the one from the other.

In cases of thrombosis nothing should be done to lower the tension within the vascular system, which, indeed, should be increased so as to assist in opening up the anastomosing channels and thus help to diminish the area cut off from its blood-supply. The patient requires stimulants in moderate amount, digitalis with ether or aromatic spirit of ammonia, to strengthen the cardiac action. But if the conditions are due to hæmorrhage, this treatment would be harmful to the patient. For in that case the action of the heart should be depressed and the tension within the vessels diminished. The indications are diametrically opposite during the comatose conditions due to hæmorrhage and to thrombosis respectively. In certain cases it may be clear that we are dealing with embolism, as in the case of a child with valvular disease of the heart and paralysis coming on abruptly. But in a large number of cases it is not safe to act in any very decisive way, and therefore the treatment should not be active.

The Prevention of Urethral Fever.—MR. G. BUCKSTON BROWNE (*British Medical Journal*, March 15, 1890), in a paper upon the treatment of retention of urine, expresses his views upon the etiology and treatment of urethral fever. The theory of the causation which he adopts is that catheter fever is a nervous fever entirely due to urethral shock, communicated through the nervous connections to the excretory apparatus of the kidneys and producing all degrees of suppression of urine from the most transient to the most complete. He is satisfied that it is not due to the absorption of urine through a urethral wound, for the passage of a fine bougie through the stricture is often followed by high fever, while a free division of the stricture with a knife is followed by little or no elevation of temperature. He does not consider it septicæmic because it may come on directly after the passage of an instrument, and, moreover, patients may live for years with their bladders full of fœtid urine and without signs of septic poisoning. If his is the true theory, the author considers it evident that gentleness of manipulation is exceedingly important.

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Of drugs which have a prophylactic influence, he believes opium, morphine, and codeine to be the most valuable. He has often found that when the passage of a catheter is followed by high fever, in the same individual and with the same instrument no fever follows the procedure if a small dose of morphine has been previously administered. If the preparations and derivatives of opium are not well borne, small doses of chloral may be employed.

Prescription for Incontinence of Urine.—GRISOLLE recommends the following pills in cases of incontinence of urine:

℞.—Extract of nux vomica . . . 3 grains
Black oxide of iron } of each . 45 "
Pulverized quassia }
Syrup, sufficient quantity. —M.

Divide into twenty pills, of which from one to three may be given daily.—*L'Union Médicale.*

Prescription for Pigmentation of Pregnancy.—The following ointment recommended by MONIER is quoted in the *Internationale klinische Rundschau:*

℞.—Cacao butter } of each . . 2¼ ounces.
Castor oil }
Zinc oxide . . . . . 45 grains.
Ammoniated mercury. . . 2 "
Oil of rose, sufficient quantity. —M.

To be applied morning and evening.

Vaccination of Newborn Children.—DR. WOLFF has recently performed a series of vaccinations upon newborn children with human as well as animal virus, and concludes that infants are susceptible to vaccinia from the first day after birth.

Vaccination of the mother, even when successful, while the child was *in utero*, gave negative results as far as a protective influence on the infant was concerned—that is to say, after birth the latter could still be inoculated with the usual effects. The inoculations on the mother were made at various periods of time between the seventieth and sixth day before labor.

In the author's experience very young infants bear vaccination well, the course of the disease being always free from fever. A particular advantage of such early vaccination is the fact that by it the child is protected from smallpox from the first day of birth, the incubation period of the latter disease being longer than that of vaccinia.

Such being the case, Wolff believes that early vaccination should be compulsory.—*Centralblatt für klinische Medicin*, March 8, 1890.

Small Doses of Antimony in Inflammations.—SURGEON-MAJOR E. LAWRIE, of India (*Indian Medical Gazette*, January, 1890), advocates the employment of antimony in various inflammatory diseases. He believes that the physiological action of the drug is not yet understood and that further studies should be made.

In all inflammatory diseases which are not of a specific nature, antimony is always used at the Afzalgunj Hospital, and, according to the author, it may be given without fear of causing nausea, diarrhœa, or depression, even in diseases where its use would seem contra-indicated. For example, during the past year it has been given with unfailing success in mucous enteritis, which is of all diseases the most fatal to children on the plains of India. In these cases it arrests the diarrhœa and fever when nothing else will do so. Dr. Lawrie has also used it lately in the treatment of typhoid fever, and makes the startling statement that it cuts the disease short with such certainty that it almost appears doubtful whether the lesions of typhoid are not rather incidental than specific. In typhoid fever, no less than in mucous enteritis, the diarrhœa depends upon an inflammation of the intestine, and though it might be thought that antimony would increase the diarrhœa, it in reality stops it, for the simple reason that it arrests the inflammation.

It has no depressing effect upon the heart unless given in doses that ordinarily produce nausea and diarrhœa.

Dr. Lawrie does not state clearly the dose usually given, but in one case, a girl of eleven years, suffering from typhoid fever, he administered 15 minims of antimonial wine every hour until twelve doses had been taken.

Cocaine Anæsthesia in Surgical Operations.—DR. ALBERS (*Centralblatt für die Gesammte Therapie*), after considerable experience with cocaine in major surgery, concludes that a five per cent. solution is the proper strength with which to secure local anæsthesia, even in operations lasting as long as three-quarters of an hour, as in the enucleation of large tumors. Stronger solutions are not necessary, and in the future he will not use them. With adults, a five per cent. solution, properly applied, is preferable to chloroform as an anæsthetic, being safer and more prompt in its action.

In the same journal is described the method of DR. ZWAARDEMAKER for anæsthetizing the nasal cavities previous to operations, or to the passage of a Eustachian catheter. This author uses pulverized starch containing from five to ten per cent. of cocaine. To the anterior nares the powder is applied by means of a feather; to the naso-pharynx, by insufflation through a curved glass tube.

Preparation of Aseptic Catgut.—BRUNNER has recently studied the methods of disinfecting catgut for surgical purposes (*Schmidt's Jahrbücher*, Number 3, 1890) and believes that *raw* catgut is easily rendered aseptic. His method of preparing it is as follows: The catgut is first scrubbed with a potash soap, then placed for twelve hours in ether, and then for a time in a 1 : 1000 watery solution of sublimate. It is preserved in a solution composed of sublimate 1 part, glycerin 100 parts, absolute alcohol 900 parts. Before using, the gut must be placed in 1 : 1000 watery sublimate solution.

The author's experience with gut prepared in this manner shows that it is absolutely safe and unirritating to the tissues.

Referring to the use of silk and linen sutures and ligatures, Brunner says that though they may be thoroughly disinfected by boiling, experience has shown that even then, if placed deeply in the tissue, they will occasionally excite suppuration.

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THE EFFECT OF HEAT ON THE RED BLOOD-CORPUSCLES.

No fluid of the body is more open to inspection than the blood, and the simplest apparatus suffices for its study. With nothing more than a microscope and a glass slide the tyro may observe the protean transformations which the expert cannot interpret. This fatal facility has betrayed many an unwary observer into the commission of curious mistakes, and, as a result, much hæmatological work has been spent in the unfruitful field of controversy.

As an example of the obstacles in the path of the hæmatologist, it need only be mentioned that one authority regards the so-called hæmatoblasts as of vital importance, while another degrades them to the rank of products of decomposition and claims, with great show of reason, to be able, by variations in his *technique*, to cause or to prevent their appearance.

It is no wonder then that announcements of discoveries in this field of research, even when made by those whose work has already been stamped with approval, are received with a certain amount of scepticism, for experience has abundantly shown that this attitude is, at least provisionally, the only proper one to assume.

The dictum of Galen with reference to the spleen —that it was an organ *mysterii plenum*—is certainly at the present day more applicable to the blood, for many problems concerning the origin and destruction of its component parts still await solution.

The border-lines between disease and health are probably more faintly traced in the blood than in any other tissue or fluid of the body. This fact is manifestly of the utmost importance in the interpretation of what are supposed to be morbid appearances, and it is owing to its oversight that many fatal blunders have been made. The mere preparation of a blood specimen may give rise to alterations in the corpuscles, which simulate most closely those universally recognized as morbid.

A remarkable simulation of morbid appearances is produced by the application of heat to the red corpuscles, the changes thus brought about closely resembling those so often described in the journals as characteristic of malarial poisoning: 1. If a fresh preparation of blood be held for a few seconds over the flame of an alcohol lamp, many of the red corpuscles may be seen to contain one or more *hyaline bodies*. 2. A certain number of these bodies escape from the corpuscles and may unite with others in pairs, so as to simulate diplococci; or in chains like streptococci. 3. Many of the corpuscles are deformed in various ways, some resembling a tadpole, others a leech, a cocked hat, etc.

The most interesting change, however, consists in the formation of flagella, some of which are attached to red corpuscles, others to the free hyaline bodies above mentioned, while still others are entirely free. These flagella are possessed of a decided undulatory movement.

These effects of the application of heat to the red corpuscles are well described and figured by Talamon in a recent article (*La Médecine Moderne*, March 6, 1890).

The significance of these alterations of the blood is twofold. In the first place, they are singularly like the changes produced in the blood by the hæmatozoon malariæ, and, secondly, heat, the agent producing them, is constantly employed in microscopical *technique*.

Talamon has plainly shown that, in the microscopic preparation of blood, heat is to be used with great caution or dispensed with altogether if serious errors are to be avoided.

NURSES AND THEIR TRAINING SCHOOLS.

IN another column we print an interesting letter from one whose name always insures a hearing. Mrs. Turner's services to the public, in very many

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ways, are so widely recognized and appreciated, that we are always pleased to answer any such questions as are referred to in her letter.

Nursing has become so important a part of the practical applications of medicine to the relief of suffering, that anything which will help to elucidate the problems which have come up in the new régime is of great importance to the sick, as well as to our own profession. The days of the untrained nurse are numbered. The large number of intelligent, educated, and refined women who are entering into nursing as a profession is a most healthful sign of the times. The establishment in this and other cities of directories for nurses, which correlate nurse, patient, and doctor, is one of the greatest advances in making nursing practically useful, and nurses quickly available. During the last year the Directory for Nurses in Philadelphia sent out 1326 nurses, many of them to distant parts of the country, and has supplied a want, strange to say, but little appreciated, though long in existence and recognized.

Turning to our correspondent's letter, it would certainly be desirable that nurses trained in special hospitals only, should not be sent for private nursing to other cases than those allied to the class in which the nurse has received her training. Lectures without clinical and practical instruction cannot insure general competency. Of course, there is a certain substratum of nursing common to all cases of disease, and a certain general qualification of the nurse which would warrant the over-stepping of this rule in special cases.

In reply to the second question, we can only state that at the Directory for Nurses the course of instruction of each training school for nurses and the other facilities for training are inquired into, and if found satisfactory, the diploma of such a school is considered, and we think rightly, a sufficient guarantee of the nurse's competency. A reasonable criterion of education and refinement should be required of each applicant before entering a training school, and we take it for granted that this would always weigh largely with a judicious superintendent of any training school. The personal manners of the nurse should always be taken into account, especially at present, when happily not a few ladies by birth and breeding are taking up nursing as a calling.

Cooking is an essential part of the nurse's education, and no one should obtain a diploma without having received instruction in this branch.

Our correspondent well asks, "What is the philosophy of making so large a part of a nurse's life in the hospital consist of common drudgery?" We confess that there is no philosophy in it, and would urge training schools, so far as possible, to eliminate such drudgery from a nurse's life. We can readily understand that there is, however, in such schools a preponderating reason which may necessitate such a departure from philosophy, and that is, the question of economy. They must live within their means; and this may require the nurses to do the common housework until the friends of the schools provide larger means.

The remaining three questions can, perhaps, be answered together. That nurses are overworked by having too many patients, by too long hours of service and too little rest, is unquestionably the case—at least at times—and in a hospital they are very apt to be so overworked, occasionally it may be for many days consecutively. Precisely the number of patients a nurse can attend to, with justice to them and herself, will vary not a little; but certainly, of ordinary cases, from eight to twelve would be all that a nurse ought to attend, and the smaller number rather than the larger. A colt should not be overtrained at the beginning of its career on the turf, and still less a woman at the beginning of her career as a nurse. The Indian mode of eliminating the weak alluded to by our correspondent will often tax and test the vitality of the strong to a dangerous extent, and may readily lead to later disease.

We must remember, however, that on the other hand something must be said for the training schools. The weak and the lazy form a large proportion of mankind, and nurses are not exempt from the ordinary frailties of human nature. The exigencies of hospital service are very many, and are not a bad preparation for the exigencies of private nursing, which not uncommonly test a nurse's powers of endurance even more than the nursing in a hospital. Good judgment and reasonable requirements are all that either side should demand.

While alluding to this question, we cannot refrain from adding one more word, namely: that it is a great pity that thus far the training of nurses has been exclusively for women. One of the best signs of the times is the recent establishment in New York of a similar school for men. We would commend this to the charitable in this city, as well as elsewhere. While, of course, there will never be the same demand for male nurses as for female, yet

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those that are needed should be as well trained as women.

TYPHOID FEVER AT CUMBERLAND.

In another column we publish an account, obtained by sending a special correspondent to the spot, of the outbreak of typhoid fever which for four months has ravaged the town of Cumberland, Maryland. As will be seen by this article, the entire outbreak is dependent upon absolute disregard of the common laws of nature and health, and of the entrance into the water of a specific germ before the sickness which was prevalent became typical of enteric fever. Another interesting addition is made to our knowledge of the spread of diseases and their dependence upon an individual cause in many instances for their existence, and the world at large is treated to the sight of a fairly intelligent body of citizens establishing a vicious circle between their mouths and the drainage of their houses and pig-styes.

REVIEWS.

The Year-book of Treatment for 1890. A Critical Review for Practitioners of Medicine and Surgery. 12mo., pp. 324. Philadelphia: Lea Brothers & Co.

The *Year-book* for 1890 possesses all the excellent features which in past years have won a recognized and important position for the publication. The general plan of the book is the same, and the only change noted in the list of contributors is the absence of the name of Dr. Sidney Coupland, who contributed an excellent section upon anæmia to the issue of 1889.

To those who are unfamiliar with the work it may be said, that it is a careful and complete review of the advances made in the treatment of all diseases—medical, surgical, and special; and that the description of each new method of treatment is commented upon by the editor of the section. In the present progressive state of medical science some such work is a necessity, and none can be found that is more satisfactory than the one under consideration.

Vaccination: its History and Pathology. Vols. I. and II. By Edgar M. Crookshank, M.D. 8vo., pp. 466 and 610. Philadelphia: P. Blakiston, Son & Co., 1889.

It is seldom that an opportunity is offered in which the reviewer can give so much praise, leavened by so little blame, as in this instance. The book which Dr. Crookshank has written bears upon each page evidences of the most laborious research and thorough understanding of the subject with which it deals. Not content with the collection of facts from outside sources, he has in every instance obtained his information either from the manuscript of the author whom he quotes, or, at least, from the authorized version of the writer's publications. Unlike most books of its character, which are too frequently gotten up in such a way as to command popularity among the profession or laity, this work has been written with absolute disregard of everything else except exactitude and correctness of assertion.

The interest which attaches to its pages is very materially increased by the reproduction of autographic letters of the illustrious Jenner, and other eminent men of his time, in regard to vaccination; while the front page is embellished by a handsome picture of Jesty. In order that the description of the cow-pox may be understood, handsome colored plates are scattered here and there, illustrative of the text; and while it is only in rare cases that colored plates convey to the reader a clear idea of a disease-process itself, we think that in this instance the artist has been peculiarly fortunate.

Braithwaite's Retrospect of Medicine. Vol. C., July to December, 1889. London: Simpkin & Co.

The medical profession, both in the United States and Great Britain, are so thoroughly familiar with Braithwaite's *Retrospect*, which for fifty years has semi-annually brought to them the substance of medical progress, that anything which we can say of it is superfluous, the only object in mentioning its appearance being to announce formally its having come once more to this office.

An Essay on Pneumatology. By J. N. Demarquay. Translated, with Notes, Additions, and Omissions, by Samuel S. Wallian. 8vo., pp. 300. Philadelphia: F. A. Davis, 1889.

The constantly increasing frequency with which oxygen and other gases are now employed, either in solution or in the form of gas, for the treatment of diseased conditions, renders the appearance of this book of interest, although it was written a number of years ago, and though an entire part of the original work has been omitted by the American translator. We are glad that the profession in this country may obtain, at a moderate price, full directions as to the employment of gases as medicinal agents. The subject is considered with the thoroughness which is only seen in the Continental writings; and after the consideration of the physiological action of oxygen, the remaining gases are taken up, such as nitrogen and hydrogen, and their employment in both medicine and surgery is given in considerable detail. It seems to us that, while these gases are of great value in certain instances, their best friends are, in reality, their worst enemies, since by their universal recommendations in all diseases, failure in some instances is bound to occur. Perhaps this fault may exist to some extent in the book before us, but it is not such a prominent feature as it generally is in such works. Altogether, the book is a valuable one, which will be found of service to the busy practitioner who wishes to keep abreast of the improvements in therapeutics.

The Long Island College Hospital.—At the graduation exercises of this college, held March 13th, fifty-five candidates were granted diplomas, among whom was a native of China.

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SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Section on Theory and Practice of Medicine.

Stated Meeting, March 18, 1890.

FRANCIS DELAFIELD, M.D., CHAIRMAN.

PULMONARY CONSUMPTION IN THE LIGHT OF MODERN RESEARCH.

In a paper with the above title, DR. S. S. BURT reviewed the recent studies upon this subject, dwelling more particularly on the important questions of infection and prophylaxis. He said that while his experience had led him to believe that pulmonary consumption was not contagious in the ordinary acceptation of the term, there was abundant evidence to show that those who were long and intimately associated with phthisical patients were liable to contract the disease; and he instanced in support of this assertion the high mortality existing in certain cloisters, where as many as fifty per cent. of the inmates died from the disease. Absolute safety could only be secured by segregation. He had great hopes for the future from Koch's discovery.

The paper was followed by a lantern exhibition by DR. DR. J. H. LINSLEY, who illustrated the appearance of tubercular tissues and bacilli by an unusually fine series of photo-micrographs.

In the discussion which followed, most of the speakers felt called upon to consider the question, "What is the use of Koch's great discovery?" Their answers embraced the two extremes of enthusiasm and despondency.

DR. A. JACOBI, who opened the discussion, spoke particularly of the question of the direct transmission of the disease by inheritance. There was an inherited predisposition, as shown by congenital deficiencies in the lungs, the circulatory apparatus, and the conformation of the chest. He cited the views of a number of eminent pathologists, showing that the general opinion among them was against direct transmission. Nevertheless, in five out of eight cases, one investigator had found tubercle bacilli in the spermatic canal and in the prostate of phthisical individuals, although there was no tubercular process in this particular locality.

DR. W. H. DRAPER thought that Koch's discovery had contributed but little toward mitigating the great scourge of tuberculosis and that it had even complicated the subject. The *role* played by the bacillus in this disease had not yet been definitely determined; for, in certain localities, and under certain conditions, it seemed to be comparatively harmless. Thus it was that the bacilli were present in the glands, and in lupus for long periods, without giving rise to any serious symptoms. Even in the lungs, where they usually gave rise to grave disorder, one occasionally found only a circumscribed process which eventually terminated in complete recovery. It had been suggested that phthisis was a mixed infection, and that the bacillus itself must come in contact with some other organism before it could cause general infection. The bacilli were far too widely disseminated for us to hope to exterminate them; and although we had reason to believe that dried sputum was a very common medium for the spread of the disease, he doubted very much whether it would be possible to control the American habit of expectoration. The discovery of the tubercle bacillus had helped us, chiefly by giving more definite and cogent reasons for urging our patients to avail themselves of the advantages of a change of locality.

DR. A. H. SMITH was also disposed to take a gloomy view of the situation. While the search for specifics should not be entirely discarded, it had the disadvantage of leading us away from useful and well-tried methods of treatment. He had had opportunities of watching the progress of tuberculosis in families in rural districts, and he had been led by these observations to conclude that the great mortality in such families was referable not so much to hereditary tendency, as to environment. These people lived in poorly ventilated apartments, whose furnishings often remained unchanged for generations, and so harbored the elements of contagion. If we were to accomplish anything by prophylaxis, we should begin with the little children, and our efforts in this direction were very commonly frustrated. No mention had been made in the paper about the relation between bronchial catarrh and tuberculosis. The former was often the starting-point of consumption; and the explanation might be found in the fact that it affords a favorable soil for the bacilli, or that the protection afforded by the epithelium against the entrance of these organisms is lost. In regard to treatment, he had been much impressed by the value of supplementing the ordinary methods by a resort to rectal alimentation. He had seen very remarkable results from this method.

DR. R. C. M. PAGE touched another point in prophylaxis by calling attention to the evils following the marriage of tuberculous people. He thought such unions should be prohibited, or at least restricted.

DR. J. W. ROOSEVELT, while not an enthusiast, believed that the use of Koch's discovery was already more apparent than that of many previous discoveries. If it only enabled us to save a few lives, it was still well worth knowing. It had certainly led to much foolishness; but it had given a point upon which in the future we might build up a method of treatment, both prophylactic and curative. It had certainly taught us that it was our duty to destroy the bacilli as far as possible; and, although we might be unable to control the national habit of expectoration, it was none the less our duty to win over as many as possible to the new order of things, and make them spit into the fire, or into receptacles which could be afterward burned. Among the most foolish methods of treatment which have claimed the attention of the profession in recent times, were the use of gaseous enemata and hot air. The latter method was particularly absurd, and was advocated in defiance of well-known principles of physiology and physics. The cooling power of the lungs, from the presence of so much air, and of the constantly circulating blood, was so great, that it was easy to see that it would be a difficult matter to raise the temperature of this air to any great degree. Moreover, the specific heat of water is high, and the latent heat is 54° C.; hence, if the air reached the temperature claimed by the advocates of this method, the albumin of the blood would be coagulated. In accidents from the bursting of steam-pipes, the steam must be below 212° F., or else it would not appear as a visible vapor; and yet such patients were severely scalded, and

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often suffered from a complicating pneumonia. It had not as yet been made clear why pulmonary phthisis should attack by preference the upper lobes of the lungs; and there seemed to be no mechanical, or other reason, why the bacilli should lodge there more abundantly. It had been said that these portions of the lungs had a more limited movement; but if so, they would receive less air, and, therefore, fewer bacteria. Others had claimed that the upper lobes were deficient in expiratory power; but this theory was still more perplexing; for, if such were the case, the air would necessarily accumulate, and ultimately cause a rupture of this portion of the lung. It had been recently shown that fresh blood-serum contained something which was capable for a short time of destroying bacteria. It was not impossible, therefore, that we might be able to find some such substance, which, when supplied to the blood-serum, would result in the destruction of the bacilli.

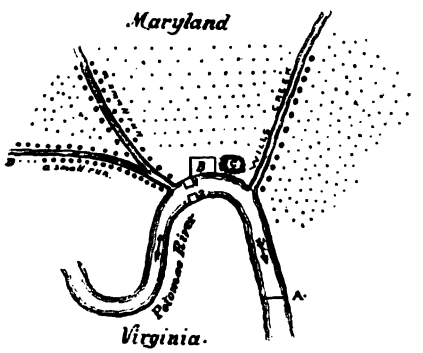
DR. E. F. BRUSH related an interesting experiment which he had made while endeavoring to raise tubercular chickens. Six laying hens were set apart and fed exclusively with the lungs from a cow that had died of acute miliary tuberculosis. At the end of seven days, one hen was killed, and tubercular deposits and bacilli were found. The twenty-six eggs which had been laid by these fowls were removed to another part of the farm, and set under other hens. Twenty-five of the eggs developed chicks, but not one was hatched alive. If he had anticipated such a result, he would have made use of control experiments at the same time. There were certain cows which were always "in heat," and no matter how often served with the bull, they never became pregnant. He had removed the ovaries from three such, and had found them tubercular. He had lost no opportunities of examining fœtal calves from tuberculous cows, but he had never seen in them the gross appearances of tuberculosis.

SPECIAL CORRESPONDENCE.

THE TYPHOID FEVER EPIDEMIC AT CUMBERLAND.

SINCE the early part of December, 1889, the town of Cumberland, Maryland, has been subjected to an epidemic of enteric fever closely resembling in its cause and course that which occurred at Plymouth, Pennsylvania, some five or six years ago. While the mortality has been by no means so high, the causes of the disease are strikingly similar in both cases. Cumberland is a town of several thousand people, situated upon the Potomac River in a valley, with steep and rather precipitous mountains surrounding it. The town depends for its existence chiefly on the railroads which centre there, the largest of which is the Baltimore and Ohio. The population is a "railroad population," and is made up largely of persons in the middle walks of life. The drainage of the streets is surface drainage, and even this is exceedingly bad, while the rainfall is somewhat excessive and the entire town damp.

It will be seen, therefore, that in this instance a peculiarly favorable soil for such an epidemic was present, and the townspeople have, with a disregard of the plainest rules of sanitation, simply brought the disease upon themselves, as the following diagram and description will show.



Dots represent houses in Cumberland.
Heavy dots represent privies.
A. Dam.
B. Water-works.
C. Garbage lot, with pigs feeding.
D. House where first case appeared.
1. Supply pipe, supposably closed.
2. Supply pipe, supposably open.

It will be seen that a line of privies, a mile long, empty directly over the bank into Will's Creek, this part of the town being made up of the poorest classes, and that two other lines empty themselves into the two small "runs" to the left of the diagram, while the entire drainage of the remaining houses eventually reaches the same streams, though not so directly. The position of the pumping station *B* is about two hundred feet below the mouth of the two runs and on the same side of the stream, on the periphery of the bend. From the point where Will's Creek empties into the pool, formed by the dam, to the pumping station is about one hundred yards, and this space is covered on the shore by several acres of garbage over which pigs roam freely. If engineers had wished to plan a means of pumping sewerage into a town instead of away from it they would not have succeeded more completely. But the stupidity permitting such an arrangement in the first place outdid itself some months later when a "Philadelphia expert" arranged to have the pipe from the pumping station carried to the opposite shore to get the water before it was contaminated. As the stream is only about one hundred to two hundred feet wide this is, on the face of it, absurd since the pool formed by the dam consists in quiet water and not water rapidly flowing. Again, the mouth of the pipe being now on the short side of the bend soon became occluded by the mud deposited there, while the water of the stream naturally followed the outer part of the course and kept the channel free. After

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the epidemic was established the city engineer found the pipe on the Virginia shore bent out of place and buried under six feet of mud, and that all the water supplied to the town was obtained from the old pipe on the sewage side of the stream.

Having given an account of the water-supply, let us turn to another interesting portion of this outbreak. Typhoid was not present until the discharges from a case of typhoid fever, living on one of the little runs at *D*, found their way into the city supply, although it is to be noted that a large amount of diarrhœa of a dysenteric type had been epidemic, and is now prevalent. In other words, the drainage of a large number of privies caused diarrhœa and dysentery, but it required a case of the specific disease named to cause an outbreak of that affection.

The mortality of the outbreak has been, so far as could be learned, about ten per cent., and the character of the cases has usually been pretty severe. In many instances the rash was present in extraordinary degree, though in others it was almost absent. Epistaxis has been an unusually common symptom, and the chief complications have consisted in intestinal hæmorrhage and hyperpyrexia. The hæmorrhages have usually been severe.

Dr. W. W. Wiley told your correspondent of an interesting case showing that the town water is at fault. A young woman, belonging to a family who used well-water exclusively, insisted upon drinking the river water, and was taken with typhoid fever, from which she suffered seven weeks, while the rest of the family escaped. Dr. Wiley also said that he had seen no case in which the disease occurred where well-water was used, and this was found to be the experience of many others. The epidemic is now less severe, but, for some unknown cause, no means are being actively taken to remedy the trouble.

CORRESPONDENCE.

BOSTON.

To the Editor of THE MEDICAL NEWS,

SIR: During the last few days two medical meetings have been held in this city, which were practically devoted to the subject of hypnotism.

At the first meeting, that of the clinical section of the Suffolk District Medical Society, Dr. Prince read a paper treating the subject from the psychological and philosophical sides rather than as a question of practical therapeutics. This paper was followed by the exhibition of two cases, both rather sensitive and showing the phenomena of post-hypnotic suggestion, illusions, and the like. Both of the cases were diseased, one perhaps having locomotor ataxia, the other having hemianopsia, hemianæsthesia, and optic neuritis of long standing—in short, the lesions pointing to organic trouble at Charcot's sensory crossway. The point of chief interest was, perhaps, that the second case, when in the hypnotic state, apparently had perfect sensation on the anæsthetic side. Dr. Prince, while not committing himself to any theory, was clearly inclined to entertain the idea of a second consciousness, brought out by hypnotism, which recognizes, but is not recognized by the normal state, and he gave several experiments in illustration. These were certainly suggestive of such a state, but seemed to the writer, as well as some others, to be more of an index of Dr. Prince's skill in imbuing the subject with his ideas.

At the second meeting, that of the Boston Society for Medical Improvement, Dr. Osgood read a long paper on the history and therapeutic value of hypnotism followed, of course, by illustrations. Dr. Osgood being a pupil and strong advocate of the Nancy school, made no extraneous suggestions, and simply showed various states of hypnotic sleep. As to treatment, Dr. Osgood disclaimed all effect on organic disease, but reported thirty-four cases, including paralysis, hysterical bronchitis, indigestion, constipation, and the like, as much improved or cured with but few exceptions.

A discussion then arose, which, but for the late hour, would have been both earnest and long. Dr. Knapp opened the debate for the opposition by doubting the legitimacy of hypnotizing patients for ordinary ailments—placing it more among the measures of last resort. Dr. Knapp also objected to the Nancy doctrine of the close connection between, or identity of the hypnotic state and sleep, in so far supporting the tenets of the Salpêtrière, and held that suggestion is not the sole cause since animals are susceptible to hypnotism. Dr. Knapp was supported by Drs. Stedman and Folsom, the former holding that there was a distinct tendency to induce a permanent semi-hypnotic state, the latter that as in the mind and faith cure, the time would soon come when patients would return to be cured of the cure.

The question was also raised as to how suggestion cured all varieties of indigestion; one, due to too much acid, another to too little, a third to organic fermentation, and so on; did the patient make an analysis, correct the chemical failure, and eject the offending germ, or must the results of modern studies of stomach troubles be discarded?

In closing, Dr. Prince strongly supported Dr. Osgood, and with him denied all bad effects.

THE TRAINING OF NURSES.

To the Editor of THE MEDICAL NEWS,

SIR: At a recent meeting of the New Century Guild of Working Women of Philadelphia, a number of whose members are trained nurses, we endeavored to consider the following questions, and, finding them too difficult for us, we should like to submit them to some higher authority. Any enlightenment on these subjects would be gratefully received by our Society.

1. Would it be right for nurses who have received their training in a hospital devoted wholly or chiefly to special cases, to be sent to general cases in private families? As, for instance, one from a surgical hospital to a nervous case—one from a hospital for nervous diseases to a maternity case, etc. This question does not refer alone to the danger of carrying disease, but to the probable competency of the specially trained

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nurse to manage cases outside her specialty. Would the fact of her having listened to a course of lectures on general nursing, without clinical or other practical instruction, insure her general competency?

2. Is the possession of a diploma from some medical institution considered a sufficient guarantee of the competency of a nurse, or must she have the written endorsement of some physician, under whose eye she has worked in her hospital or training school?

3. Is there any criterion of education or refinement for the admission of applicants to instruction in nursing? Would it be proper to admit a woman, however honest, sober, and healthy, whose ignorance, uncouthness, loudness, and general unfamiliarity with the niceties of household life would make her objectionable in a sick room? May not the personal manners of a nurse be sometimes a matter of vital importance to the patient?

4. Is delicate cooking an essential part of a nurse's education? Is she expected to be able to prepare, or oversee the preparing, of whatever special food is ordered for her patient? Is this made so essential that she cannot get her diploma without it?

5. What is the philosophy of making so large a part of a nurse's life in the hospital consist of common drudgery? After she has once learned, as she certainly ought, to make a fire, wash dishes, wash and scrub a floor, etc., would it not be better to relieve her of such work, and thus allow her more time than she can now command for the higher parts of her profession—notably dainty cooking?

6. To how many patients, excluding cases exceptionally hard or easy, can the average nurse do justice, without injustice to herself? And would not the practice, in any institution, of exceeding the adjudged number, result in breaking down the very conscientious, and making habitual shirkers and slovens of the rest?

7. Is it well to make the preliminary training of a nurse so hard, her hours so long, her running up and down stairs so incessant, her allotted time of rest so disregarded, the number of patients under her care so large that she must either neglect them or drive along until she herself begins to waste the hospital's time, by dropping into one of the cots for repairs? Are there not, in most hospitals where nurses are taught, too large a proportion who break down before graduating?

8. If it should be answered to the last question that nobody is wanted as a nurse whose constitution will not bear such strains, on the principle of those Indians who subject their children to great hardships, arguing that the strong will stand it and that the weak should die, we still might ask—Is it not possible that the Indian treatment often plants the seeds of future feebleness, even in those who survive? And may it not be that many young women who would have proved capable of the care of any cases they were likely to meet outside, are broken in strength by the tests, unnecessarily severe, to which they are subjected in their preliminary training?

ELIZA S. TURNER.

THE COMBINATION OF ANTIPYRINE WITH SWEET SPIRITS OF NITRE.

To the Editor of THE MEDICAL NEWS,

SIR: The combination of antipyrine with sweet spirits of nitre, as you are aware, has the effect of producing a precipitate, which causes a loss of activity in proportion as the antipyrine is affected by the chemical change. It has been reported that this precipitate is not poisonous, and that the combination may be used without injury to the patient, the sole effect being upon the antipyrine. Through information gained from a friend, who is now a student in pharmacy, and has had occasion to investigate the matter, I have learned that this chemical change can easily be avoided, and I desire to lay the matter before the readers of this journal.

Upon the addition of antipyrine to sweet spirits of nitre a dull, greenish precipitate is thrown down, which, for want of a better name, has been called "iso-nitroso-antipyrine," a substance which has been demonstrated to be insoluble in water, alcohol, or any of the stronger acids. Ordinarily, when antipyrine is added to sweet spirits of nitre, and the precipitate falls to the bottom, the supernatant liquid is at first yellowish, then bluish, and after keeping for some time it turns a deep red, the same color as that produced by the addition of ferric chloride to antipyrine. The cause of this discoloration may be attributed to the acidity of the nitre, due to the decomposition of the ethyl nitrite by the slow absorption of water from the atmosphere, and this is apparently prevented by neutralizing this acidity of the nitre (nitrous acid?) by the addition of ammonia water, in the proportion of two drops to the ounce of nitre, before the addition of antipyrine. The solution thus prepared is colorless, and will remain so until the volatilization of the ammonia water, and it is believed that no deleterious effect is produced from a therapeutic standpoint, as will be the case when this precaution is omitted.

In order to test the question practically, I have had a solution of antipyrine and sweet spirits of nitre prepared in the proportion of half an ounce of the latter to fifteen grains of the former, together with one drop of ammonia water, and although it has been standing where the temperature is about 80° F., I have noticed no change at the end of a week, except a slight, colorless sediment; the solution still gives the odor of nitre and of ammonia, and I am disposed to think that if properly corked, it would remain in its present condition for weeks. Where antipyrine and sweet spirits of nitre are ordered together, it will be advisable to have the acidity of the nitre neutralized before the addition of antipyrine, and then caution the patient that the medicine should be kept in a well-stoppered bottle and in a cool place, so as to postpone the evaporation of the ammonia as long as possible.

JOHN AULDE, M.D.

1910 ARCH STREET, PHILADELPHIA,
March 29, 1890.

NEWS ITEMS.

Adirondack Sanitarium.—The results of the "cottage plan" of the treatment of phthisis pursued at the Adirondack Sanitarium, at Saranac Lake, New York, as shown in their last report, are such as should encourage the founding of similar institutions in other equally favorable localities. Of the 96 patients under treatment during the past nine months, 1 died, 11 who continued to lose ground were returned to their homes, 17 have somewhat improved, a similar number have been restored to lives of usefulness, and 8 are thoroughly cured. The patients now under treatment number 42. The financial condition of the institution continues very satisfactory.

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Southwestern Ohio Medical Society.—The semi-annual meeting of the Southwestern Ohio Medical Society will be held at Springfield, O., on April 17th and 18th. An excellent programme is announced. Physicians of that section of the State should certainly attend.

Revision of the United States Pharmacopœia.—The following has been received from Robert Amory, M.D.:

The convention for the revision of the United States Pharmacopœia will be held in the city of Washington, May 7th, at noon. As it is necessary that some preliminary arrangements should be prepared in advance of the convention I have taken upon myself the responsibility of appointing the following delegates to act as a Committee of Arrangements:

Dr. Samuel C. Busey, Dr. C. H. A. Kleinschmidt, Dr. Robert T. Edes, of Washington; Mr. P. W. Bedford, of New York, and a committee appointed by the National College of Pharmacy of the following members: W. S. Thompson, J. A. Milburn, and S. E. Waggaman, M.D.

As soon as arrangements are completed, a circular will be mailed to each organization whose credentials are received by me before April 10th, and to any delegate who will forward his address on a stamped envelope enclosed to me.

Medical Association of Missouri.—The thirty-third annual meeting of the Medical Association of Missouri will be held at Excelsior Springs, Clay County, Mo., May 6, 7, and 8, 1890. The officers for the year are: President, L. I. Mathews, of Carthage; Vice-presidents, Jacob Geiger, A. B. Miller, N. Guhman, J. F. Robinson, and W. C. Tynee; Recording Secretaries, J. C. Mulhall and Joseph Sharp; Corresponding Secretary, J. R. Fritts; Treasurer, C. A. Thompson.

State Medical Society of Arkansas.—The fifteenth annual meeting of the State Medical Society of Arkansas will be held at Little Rock, May 14th, 15th, and 16th.

Liabilities for Injurious Patent Medicines.—The Supreme Court of Georgia has just rendered a decision, says the *New York Herald*, which is likely to attract widespread attention, and to have a salutary effect on the preparation of patent medicines. It holds that the proprietor of such a preparation is liable to damages for injury done to any person who takes the medicine according to directions.

This liability does not fall upon the druggist who sells the medicine, but upon the proprietor, even when the consumer buys not from him directly, but from the druggist. Here is the view the court takes of the matter:

"These proprietary or patent medicines are secret or intended by the proprietors to be secret as to their contents. They expect to derive a profit from such secrecy. They are, therefore, liable for all injuries sustained by any one who takes their medicine in such quantities as may be prescribed by them.

"There is no way for a person who uses the medicine to ascertain what its contents are ordinarily, and in this case the contents were only ascertained after an analysis made by a chemist, which would be very inconvenient and expensive to the public.

"Nor would it be the duty of a person using the medicine to ascertain what poisonous drugs it may contain. He has a right to rely upon the statement of the proprietor, printed and published to the world; and if, thus relying, he takes the medicine, and is injured on account of some concealed drug of which he is unaware, the proprietor is not free from fault, and is liable for the injury thereby sustained."

Invitation for a Medical and Scientific Exhibition at the Approaching International Congress.—In connection with the Tenth International Medical Congress to be held in Berlin, between the 4th and 10th of August, there is to be an International Medical and Scientific Exhibition. The exhibits will be of an exclusively scientific nature, as follows:

New or improved scientific instruments and apparatuses for biological and strictly medical purposes, inclusive of apparatuses for photography and spectral analysis as far as applicable to medicine.

New objects and preparations in pharmacological chemistry and pharmacy.

New foods.

New or improved instruments subservient to any of the departments of medicine, including electrotherapy.

New plans and models for hospitals, convalescent homes, and disinfecting and bathing institutions and apparatuses.

New arrangements for nursing, including transportation baths, etc.

New apparatuses in hygiene.

Applications or inquiries inscribed "Ausstellungs-Angelegenheit," and accompanied with a printed card containing the name and address of the firm thus applying, should be directed to the Secretary General, Dr. O. Lassar, Carlstrasse, No. 19, Berlin, N. W., Germany.

R. Virchow, President.

E. von Bergmann, E. Leyden, W. Waldeyer, Vice-presidents.

O. Lassar, Secretary General.

An Investigation of the Use of Electricity in Uterine Fibromata.—The Philadelphia County Medical Society has appointed a committee, consisting of Drs. Parvin, Hirst, Montgomery, Massey, and Baldy, to conduct a series of observations relative to the effect of electricity in fibroid tumors of the uterus.

The Committee requests the profession at large to send any case of the kind to the Gynecological Out-Patient Department of the Pennsylvania Hospital, Mondays, Wednesdays, or Fridays, at 12 o'clock.

Iowa State Medical Society.—The thirty-ninth annual session of the Iowa State Medical Society meets at Des Moines, April 16th, 17th, and 18th. Judging from the announcement, the meeting will be very interesting.

Professor Henoch.—Professor Henoch, who has been for thirty years at the head of the clinic for children's diseases at the Charité Hospital, Berlin, will celebrate his seventieth birthday on July 16th. His friends propose to make the event memorable by the presentation of a bronze bust to the clinic.

The Successor of von Troeltsch.—Dr. W. Kirchner will succeed the late Professor von Tröltsch at the otological

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clinic at the University of Wurtzburg. He is the author of a handbook of aural surgery.

University of California.—The legislature of California has voted to appropriate the sum of $80,000 to build a new college for the medical department of the University of California, in San Francisco.

Professor von Nussbaum.—Professor von Nussbaum, of Munich, was a victim of the influenza, and has not yet recovered sufficiently to enable him to resume his official work. He has improved, however, and has announced that he will resume his clinic during the summer semester.

Insurance Losses from the Influenza.—Mr. Smee, an actuary for a large London insurance society, has made an estimate that the losses in England from the influenza epidemic will amount to one million of pounds, cash paid out by companies and beneficial societies, and another million in the losses of time and wages and disorganization of trade.

Obituary.—DR. CHARLES J. NORDQUIST was fatally injured by a railroad train on the Harlem Railroad, not far from his home at Tuckahoe, Westchester County, N. Y. He was the son of Dr. Lars Peter Nordquist, who early in the present century was surgeon to the King of Sweden. Dr. Nordquist served with great credit in the late war as regimental surgeon and as medical inspector in the First Army Corps. He had only recently been reëlected to serve a second term as coroner of his county.

Appointments in the New York Post-Graduate Medical School.—The following additions have been made to the Faculty of the New York Post-Graduate Medical School and Hospital: Charles B. Kelsey, M.D., Professor of Rectal Diseases; Charles H. Knight, M.D., Professor of Laryngology and Rhinology; Reynold W. Wilcox, M.D., Professor of Clinical Medicine; S. Lustgarten, M.D., formerly Privat Docent in Vienna University, Instructor in Syphilis and Dermatology.

Western Pennsylvania Medical College.—The fourth annual commencement exercises of the Western Pennsylvania Medical College were held in the Grand Opera House, Pittsburg, on March 27th; the degree of M.D. was conferred on 29 graduates, being about 25 per cent. of the class in attendance during the past term.

In the evening of the same day the Alumni Association of the college, now numbering 120, was entertained by the Faculty at a banquet provided at the Seventh Avenue Hotel.

Chicago Polyclinic.—A special course of nine lectures on "abdominal and pelvic surgery," with demonstrations on dogs and cadavers, was given at the Chicago Polyclinic, by Drs. N. Senn, Charles T. Parkes, Christian Fenger, and W. T. Belfield, beginning March 24, 1890, and lasting two weeks.

Association of American Physicians.—The preliminary programme of the fifth annual meeting of the Association of American Physicians to be held at the Army Medical Museum Building, Washington, D. C., on the 13th, 14th, and 15th of May, 1890, is as follows:

1. The President's Inaugural Address, by Samuel C. Busey, M.D., of Washington.
2. Consideration of the Revised Constitution.
3. Disturbances of Sleep. Referee, S. Weir Mitchell, M.D., of Philadelphia. Co-referee, Charles F. Folsom, M.D., of Boston.
4. Methods of Diagnosis in Diseases of the Stomach. Referee, Francis P. Kinnicutt, M.D., of New York. Co-referee, A. F. Shattuck, M.D., of Boston.
5. Inflammations of the Appendix and Cæcum, and the Duty of the Physician regarding them, by Norman Bridge, M.D., of Chicago.
6. Anæsthetic and Non-anæsthetic Hysteria, by Charles L. Dana, M.D., of New York.
7. Seizures Characterized by Shock and Loss of Consciousness, by Israel T. Dana, M.D., of Portland, Me.
8. The Diathetic Causes of Renal Inadequacy, by I. N. Danforth, M.D., of Chicago.
9. Antisepsis in Midwifery, by William T. Lusk, M.D., of New York.
10. Varicose Aneurism of the Arch of the Aorta, by William Pepper, M.D., and J. P. C. Griffith, M.D., of Philadelphia.
11. Natural History of Typhoid Fever, by James E. Reeves, M.D., of Chattanooga.
12. What can and should be done to Limit the Prevalence of Tuberculosis in Man, by Edward O. Shakespeare, M.D., of Philadelphia.
13. Migraine, by Wharton Sinkler, M.D., of Philadelphia.
14. Etiology of Pleurisy, especially in its Relation to Tuberculosis, by A. A. Smith, M.D., of New York.
15. Report of Cases of Angio-neurotic Œdema, by Samuel B. Ward, M.D., of Albany.
16. Notes of a Case of Acromegaly, by J. E. Graham, M.D., of Toronto.
17. A Case of Acute Pancreatitis, by R. H. Fitz, M.D., of Boston.
18. Demonstration of Pathological Specimens, by W. T. Councilman, M.D., of Baltimore.

Those who are to contribute papers may send to the Secretary, Dr. Henry Hun, 33 Elk St., Albany, N. Y., the names of members whom they wish to have invited to participate in the discussion; and by sending their papers to the Recorder, Dr. I. Minis Hays, 266 South 21st st., Philadelphia, as early as possible and at a reasonable time prior to the meeting, they can receive five or six copies in type, which they can forward to those members whom they wish to have participate in the discussion.

There will probably be time at the meeting for the reading of two or three papers more than those on this programme. Members who desire to contribute such papers are requested to send the titles of them to the Secretary.

The constitution provides that papers shall not exceed twenty minutes in the reading.

Foreign Physicians in France.—The French Minister of Foreign Affairs attended a recent meeting of a commission appointed to devise regulations governing the med-

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ical practice of foreign physicians residing in France. He urged the expediency of removing all restrictions from foreign practitioners who practise among their fellow countrymen at the health resorts in the south of France and at the watering places; and advocated the granting of a special form of license to meet the cases of those foreigners who are desirous of practising some special branch of medicine.

The Society of the Alumni of Bellevue Hospital.—The ex-internes of Bellevue Hospital propose, this year, to have a special reunion, covering parts of three days. The regular monthly meeting will be held April 8th, at which a surgical subject will be discussed by Dr. Charles Phelps and other prominent surgeons. On the following morning, Dr. Sayre will give a surgical clinic at Bellevue; in the afternoon a meeting will be held at the Mott Library, when papers will be read by Dr. R. A. Vance, of Cleveland, on the results of injury to the hip-joint, and by Dr. Brandreth Symonds on glycosuria and the delicate tests for sugar; to be followed in the evening by an elaborate banquet. A clinic by Dr. Lusk, on the morning of the 10th, will close the reunion.

Death from Nitric Acid Fumes.—A very unusual form of fatality occurred in New York recently. A young man, aged twenty-five years, who was employed in an electro-plating works, dropped a tool into a vat containing nitric acid, and in spite of warnings remained too long bent over the vat, while trying to recover his lost tool. He inhaled the acid fumes, was taken sick soon after, and removed to a hospital, where he died about twenty-four hours later.

An Irregular Medical College.—The Medical and Surgical College of New Jersey, by many supposed to have been suppressed or suspended, has been reported in the daily papers to have held on March 20th a "commencement" at Cooper's Hall, Jersey City. The diploma of this "college" has no standing at the Board of Health, and the County Medical Society has condemned the undertaking.

Bogus Medical Diplomas.—The *Boston Medical and Surgical Journal* calls attention to the diploma issued by the "Druidic Banchoreion" of New York State, as liable to mislead the unwary public. As described by the *Buffalo Advertiser*, these diplomas are used by designing persons as licenses to practise medicine.

An American Merchant's Bequest.—An old New York merchant, Mr. Thomas Hope, has bequeathed to his native town of Langholm, Scotland, the sum of $400,000, to found a hospital and dispensary. Langholm has a population of about 4000, so that this gift will make abundant provision for all who require hospital treatment.

Condemnation of Cheap Lodging-houses in New York.—The New York City Board of Health has ordered a number of the cheap and low lodging-houses, in the lower parts of the city, to be vacated on or before May 1st. Of these, twenty or more have been condemned because of sanitary defects in regard to light and ventilation.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 1 TO APRIL 7, 1890.

By direction of the Secretary of War, leave of absence for six months, on surgeon's certificate of disability, with permission to leave the Division of the Pacific, is granted ARTHUR W. TAYLOR, *Captain and Assistant Surgeon.*—Par. 10, *S. O. 78, A. G. O., Washington*, April 3, 1890.

SKINNER, J. O., *Captain and Assistant Surgeon* (Fort Ontario, New York).—Is hereby granted leave of absence for one month, to commence forthwith, as his services may be required with troops to change station early in May.—Par. 5, *S. O. 75, Division of the Atlantic*, April 2, 1890.

By direction of the Secretary of War, a Board of Medical Officers, to consist of: EDWARD P. VOLLUM, *Colonel and Surgeon;* GEORGE M. STERNBERG, *Major and Surgeon;* HENRY MCELDERRY, *Major and Surgeon;* and JOHN J. COCHRAN, *Captain and Assistant Surgeon*, is constituted, to meet in New York City, on the 28th day of April, 1890, or as soon thereafter as practicable, for the examination of Assistant Surgeons for promotion, and of candidates for admission into the Medical Corps of the Army. The Board will be governed in its proceedings by such instructions as it may receive from the Surgeon-General.—Par. 6, *S. O. 78, A. G. O.*, April 3, 1890.

TAYLOR, MARCUS E., *Captain and Assistant Surgeon.*—The leave of absence for one month, granted by Par. 3, S. O. 26, *c. s.*, Headquarters Department of the Columbia, is hereby extended one month, on surgeon's certificate of disability.—Par. 1, *S. O. 19, Division of the Pacific*, March 27, 1890.

By direction of the Secretary of War, leave of absence for two months, to take effect on or about April 15, 1890, is granted CHARLES F. MASON, *First Lieutenant and Assistant Surgeon.*—Par. 3, *S. O. 76, A. G. O., Washington*, April 1, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE TWO WEEKS ENDING APRIL 4, 1890.

AMES, H. E., *Passed Assistant Surgeon.*—Ordered to the Museum of Hygiene, Washington, D. C.

FEREBEE, N. MCP., *Surgeon.*—Ordered to the U. S. S. "Essex."

ANDERSON, FRANK, *Passed Assistant Surgeon.*—Detached from the U. S. S. "Dolphin," and ordered home.

GRIFFITH, S. H., *Passed Assistant Surgeon.*—Detached from the Museum of Hygiene, and ordered to the U. S. S. "Dolphin."

HEFFENGER, A. C., *Passed Assistant Surgeon.*—Ordered to temporary duty at Navy Yard, Portsmouth, N. H.

SIMONS, MANLY H., *Surgeon.*—Ordered to superintend repairs at Widow's Island Hospital, in addition to present duties.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVI. SATURDAY, APRIL 19, 1890. NO. 16.

ORIGINAL LECTURES.

PSORIASIS.

A Clinical Lecture.

BY HENRY J. REYNOLDS, M.D.,

PROFESSOR OF DERMATOLOGY IN THE COLLEGE OF PHYSICIANS AND SURGEONS, OF CHICAGO; CHIEF DERMATOLOGIST AND GENITO-URINARY SURGEON TO THE WEST SIDE FREE DISPENSARY, ETC.

GENTLEMEN: In the case of the patient before us to-day, we have a disease wherein the diagnosis is usually a comparatively simple matter. You will remember, in recently considering eczema, that we had a disease wherein we generally not only failed to find any well-pronounced or pathognomonic diagnostic points, but in various cases almost every known form of lesion, or a host of different kinds of objective symptoms may be present, on no one of which could a diagnosis be made—a disease so variable in its behavior that probably upward of one hundred different names have been used to designate its various forms.

In the disease we are now about to consider, however, we not only always have the same chain or combination of symptoms present by which a diagnosis can always be made with positiveness, but we have several features or symptoms which are met with in this disease alone, any one of which may be regarded as almost pathognomonic. The name of the disease to which we shall now confine our remarks, and which is fairly well illustrated in the case of the man before us, is *psoriasis*.

Let us, however, before directing our attention to this particular case and the symptoms found therein, as is imperatively essential to an intelligent study of any disease, and particularly the diseases of the skin, first get a clear understanding of the characteristics by which the disease is recognized.

This disease, though not so frequently met with as acne or eczema, is comparatively common, ranking next in frequency to the diseases already mentioned. It is not contagious, it may occur in both sexes at almost any age, and is probably more frequently encountered in winter than in summer. When first seen the lesions are usually in the form of small, slightly elevated macules, covered by very fine pearly scales, which lesions may be very numerous, covering a large portion of the body, or may be very scanty. Owing to the peculiar manner in which these lesions are distributed, several names have been employed to signify the different manifestations, such as psoriasis guttata, psoriasis diffusa, psoriasis punctata, etc. As the disease progresses to its full development the lesions become larger and more pronounced, and the scales become more numerous. Usually when first seen the lesions vary in size from that of a silver ten-cent piece to a silver quarter, are round, with well-defined margins and with perfectly healthy skin between the lesions. The patches are always covered by a mass of white, shiny, pearly scales. Though the pearly, shiny scales are not always visible at first glance, by gently scratching with the finger-nail they at once take on the shiny, pearly character. These scales invariably cover the entire lesion to its very margin, so that no portion of the reddened patch, which is always found underneath the scales, can be seen until the scales are removed. On their removal we find a bright red patch, on the surface of which may be seen in several places pin-point oozings of blood. Just here I wish to call your attention to a characteristic that is not laid down in the books: Upon removal of the scales we sometimes fail to find these pin-point oozings of blood, but the fact is, while the scales appear to be all off, there still remains a very thin, transparent film which covers the entire patch. While this may also be regarded as a scale, the point I wish to call your attention to is the fact that we always find this very thin film, and that it is sometimes necessary to scratch almost down into the lesion before getting off the lowest scale or film, which, when once removed, always shows the pin-point oozing. One reason why I wish to call your attention particularly to the presence of this film is because while other diseases, as some forms of syphilitic eruption, for instance, may have scales very closely resembling those of psoriasis, we never in any of them find this characteristic broad, uniform, thin film. The eruption is not only always symmetrical, but general in its tendency, in well-marked cases usually involving the entire surface of the body. By symmetrical we mean an eruption that tends to involve both sides of the body equally, and in psoriasis we almost invariably find this characteristic. When we speak of it as a generalized eruption it must not be implied that the lesions are necessarily very numerous, but that, however few in number, they are sure to be distributed here and there over all parts of the body, usually affecting both upper and lower extremities equally. Now, while the disease tends to involve the entire surface of the body, there are certain localities which it seems to have a preference for. The parts where it is oftenest found are the extensor surfaces. This peculiarity is usually so well marked that we may at times find only a patch on each olecranon process, with perhaps also a patch over each shin or patella. It must not be understood, however, that the disease never affects the flexor surfaces, but merely that it has a preference for the extensor surfaces, and is to be found in greatest abundance on these parts. There are localities, however, where the disease is rarely seen. It almost never affects the palms of the hands or soles of the feet, and it very rarely affects the face to any extent. Even when the scalp is extensively involved, after creeping down slightly over the margin of the forehead the eruption generally terminates there, sparing the face. This point that I now refer to is sometimes very useful in

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differentiating it from other scalp diseases. The disease is quite chronic in its tendency and is never characterized by moisture during any period of its existence, being always dry from first to last. There is almost never any itching or other subjective sensation of any consequence; there is no essential constitutional disturbance, and when cured it is very liable sooner or later to return.

Turning now to the patient, we find that he is fifty-two years of age, Bavarian by birth, and that his general health is good. He has been troubled with the eruption on and off for three or four years, having been treated and cured several times during this period. We find, as you see, several patches on the front of each leg, some on each arm, affecting the back or extensor surface more than the front, and particularly the vicinity of the olecranon process. We also find a few spots over the sacrum, and others on the chest. As he passes around amongst you, you will please examine and carefully study the characteristics which we have already described. You will notice that the lesions are round, varying in diameter from one-quarter of an inch to one inch, that the patches are entirely covered by scales, and that the scales are white, shiny, and pearly, which appearance you may more fully develop by gently scratching with the finger-nail. Upon removing the scales you will notice the bright red patch with pin-point oozing of blood. You will notice that the skin between the lesions is entirely healthy, and that the disease terminates abruptly at the margin of the patch, instead of fading off gradually as the redness in eczema and certain other diseases does. You will notice it is both symmetrical and general in its distribution, that there is an entire absence of moisture, and from the fact that the parts are entirely undisturbed and are covered with scales you may at once make up your minds that the finger-nails have not been used for the relief of itching, and, consequently, that the symptom of itching is entirely wanting. You will also notice the points I referred to in regard to the extensor surfaces being principally involved. While the disease involves a considerable surface of the body, you fail to find any lesions upon the palms, soles, or face, and from the fact that the disease has already existed three or four years its chronic character may be established.

Etiology.—As to the etiology of the disease very little is known. It is, however, neither hereditary nor contagious, and may occur at any age in either sex. Inasmuch as it seems to be more frequently met with in cold weather, it is probable that the influence of cold or the dryness of the skin is in some way concerned in its etiology.

Diagnosis.—The diagnosis of this disease is, as I have already intimated, usually not a difficult matter. The pearly character of the scales, the pin-point oozing of blood, and the thin film immediately covering the red patch are almost pathognomonic symptoms of psoriasis.

In obscure cases we must differentiate it from *eczema* on account of the great frequency of the latter disease and its somewhat similar appearance; *syphilis*, owing to the fact that there is the same tendency to general distribution, circular shape of lesion, etc.; *tinea favosa* (favus), *tinea tonsurans* (ringworm of the scalp), and *seborrhœa sicca*, inasmuch as psoriasis when confined chiefly to the scalp, as is sometimes the case, is not distinctly pronounced in its symptoms. By carefully considering, however, the following differential diagnostic table which I have arranged, one need never fail in the diagnosis of psoriasis:

Psoriasis.	*Eczema.*
1. No itching.	1. Usually intense itching.
2. Always dry.	2. Always a history of moisture.
3. Prefers extensor surfaces, the elbows and knees in particular.	3. Prefers the flexor surfaces.
4. Usually a generalized eruption.	4. Never a general eruption.
5. Symmetrically distributed.	5. Never a symmetrical eruption.
6. Scales white, shiny, and silvery.	6. Scales never white, shiny, or silvery.
7. Crusts never form.	7. Always a tendency to the formation of crusts.
8. Lesions uniform.	8. Lesions multiform.
9. Lesions round and well defined.	9. Patches irregular and ill defined.
10. The skin between the lesions always healthy.	10. Always a tendency to diffuse redness between the lesions.
11. Pin-point bleeding on removal of the scales.	11. Never pin-point bleeding when scales are removed.

Psoriasis.	*Syphilis.*
1. May occur at any age.	1. Generally occurs after puberty.
2. No history of syphilis.	2. Generally a history of syphilis.
3. Prefers the extensor surfaces.	3. All parts affected about alike.
4. The lesions are entirely covered by the scales.	4. In the squamous syphilide the red patch is almost never completely covered by scales, but is apt in every case to show, at least, at the margin.
5. Scales white, shiny, or silvery.	5. The scales, though sometimes somewhat lustrous, are generally dirty, yellowish, grayish, or ashy in color.
6. Scales very abundant.	6. Scales generally scanty.
7. Generally a thin adherent film underneath the scales, covering the entire patch.	7. Never a broad thin film under the scales covering the entire patch.
8. Never crusts.	8. Generally crusts, sooner or later.
9. The superficial scales are loose.	9. The scales are all more or less adherent.
10. The redness is bright or inflammatory in color.	10. The redness is dark or copper-colored.
11. Pin-point bleeding on removal of the scales,	11. The bleeding when the scales are removed is never decidedly pin-point in character.
12. Lesions uniform.	12. Lesions multiform, and even in the squamous variety the lesions tend to the papular type.
13. Never destructive.	13. Always destructive, sooner or later.
14. Never affects the palms or soles.	14. Frequently affects the palms and soles.

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Psoriasis.	*Syphilis.*
15. Always dry.	15. Generally pus or other moisture, sooner or later.
16. Characterized by frequent recurrences for years.	16. When once cured, rarely recurs, and when it does it is of a destructive character, bearing no resemblance to psoriasis.
17. Patient generally in good general health.	17. Patient generally shows constitutional symptoms.
18. Not affected by syphilitic treatment.	18. Generally cured by syphilitic treatment.

Psoriasis.	*Favus.*
1. No evidence of contagion.	1. Usually a history of contagion.
2. Shiny scales.	2. Never scales, but sulphur-yellow cup-shaped crusts.
3. Not confined to the scalp, but fringes the brow; also usually found on other parts of the body.	3. Almost invariably confined to the scalp.
4. Symmetrically distributed.	4. Not symmetrical.
5. Lesions numerous and coin-sized.	5. Generally only one or a few patches.
6. Hairs normal.	6. Hairs brittle, broken off, and loose.
7. Never any baldness as a result.	7. Generally in all cases some thinning of the hair on the patches.
8. May disappear and return.	8. Never gives a history of having disappeared and relapsed.
9. Disappears readily under appropriate treatment.	9. Very stubborn to cure.
10. No parasite to be found with the microscope.	10. The parasite always readily seen with the microscope.

Psoriasis.	*Tinea Tonsurans.*
1. No history of contagion.	1. Generally a history of contagion.
2. The eruption rarely so scanty but that it may be found on other parts of the body, as elbows, knees, etc.; and in any event is always sure to fringe the brow below the hair.	2. Usually confined to the scalp, but if found on non-hairy skin assumes the well-marked ringworm appearance.
3. Symmetrically distributed.	3. Not symmetrical.
4. Lesions numerous and coin sized.	4. Generally only one or a few patches.
5. Scales white and shiny, and more or less adherent.	5. Scales loose and not lustrous.
6. Hairs normal.	6. Hairs loose, brittle, and broken off.
7. Never results in baldness.	7. May produce some thinning of the hair in the patches.
8. May disappear and return.	8. Never gives a history of having disappeared and relapsed.
9. Easy to cure.	9. Very stubborn to cure.
10. No parasite to be found with the microscope.	10. The parasite always to be found with the microscope.

Psoriasis.	*Seborrhœa Sicca.*
1. White, shiny, dry scales.	1. Thick greasy scales or small crusts.
2. Rarely confined to the scalp, but fringes the brow, and generally found on other parts, as elbows and knees, etc.	2. Generally confined to the scalp.
3. Symmetrical, but not diffuse.	3. Symmetrical and diffuse.
4. Distinct coin-sized lesions, with healthy skin between them.	4. No lesions other than, at times, some general hyperæmia.
5. Hairs generally normal.	5. Usually some general falling of the hair.
6. Never produces thinning of the hair.	6. If not arrested early, produces some permanent general thinning of the hair.

Treatment.—As the disease is more or less chronic in character, with a tendency to return, naturally very many remedies, both internal and local, have been made use of at various times with a view of curing and eradicating the disease. The disease, as already stated, is always characterized by the same symptoms, regardless of the case or stage of the disease, so that the treatment may be more or less uniform, and I need only occupy a few minutes of your time in considering this part of the subject. As in most other scaly eruptions, the first thing to be done is to get rid of the scales. This is best accomplished by the use of (two or three times a day at the beginning of the treatment) some oleaginous preparation, as any simple ointment, combined with the daily use of plenty of hot water and soap, with a rough towel or flesh-brush for the purpose of getting rid of all the scales that have already been softened by the oiling process. When the scales have been pretty thoroughly removed, the best remedy or local application is ten grains of chrysarobin to the ounce of lard, vaseline, or other similar substance. This remedy, to be effectual, must be thoroughly worked into every individual patch on the surface of the body once or twice a day. In two or three days the oiling, soaping, and washing process must again be resorted to to get rid of the scales which have re-accumulated. By following up this process, almost every case of psoriasis may be cured in the reasonably short space of a few weeks. The other remedies which may be used are pyrogallic acid, citrine ointment, naphthol, etc. As to constitutional treatment, I think the majority of dermatologists favor the use of some form of arsenic, psoriasis being the disease of all others wherein arsenic is said to be necessary or beneficial. Arsenic may be given in the form of Fowler's solution, beginning with a dose of five drops and gradually increasing till the full dose is reached. I mention arsenic, however, in the treatment of psoriasis, not because I think it is essential or useful, but because it is usually recommended and used. In my own practice I have not used arsenic for six years in the treatment of psoriasis, and, as far as I am capable of judging, I am able to cure the disease just as well without it, or other constitutional treatment, as with it. It may have a tendency to prevent the return of the disease, but I think even this is doubtful.

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THE TYPES OF INSANITY.

A Clinical Lecture,
delivered before the Class of the Woman's Medical College
at the Cook County Insane Asylum.

BY DANIEL R. BROWER, M.D.,
PROFESSOR OF DISEASES OF THE NERVOUS SYSTEM, DIDACTIC AND CLINICAL, IN THE WOMAN'S MEDICAL COLLEGE; PROFESSOR OF MENTAL DISEASES AND LECTURER ON THE PRACTICE OF MEDICINE IN RUSH MEDICAL COLLEGE, CHICAGO, ILL.

LADIES: Through the kindness of Dr. John A. Benson, Superintendent of this Asylum, we have before us to-day a number of cases illustrating the several types of insanity to which your attention has already been called. First, we have four cases of *melancholia*, cases of insanity that show mental depression. This boy's case is a comparatively recent one, and his attitude is that common to the disease. You notice that he sits with his head bent upon his chest. He has no inclination to straighten himself up and show us his facial expression, which would reveal the mental misery he has endured. These cases of melancholia show not only depression of mind but great depression of all the functions of the body. The temperature is below normal, the circulation is feeble, the skin is cold and clammy, the tongue is coated, the digestion is impaired, the bowels are constipated, the assimilation is defective, the pupils are dilated, and in the beginning there is more or less discomfort in the head, a sense of fulness or an absolute pain. They steadily lose flesh in the early stages of the disease. This patient is suicidal in his tendencies, as are many cases of melancholia, and requires, therefore, the closest possible observation and care to prevent him from taking his life.

I now show you another case of melancholia, of longer duration. This patient has had the disease for the last two years, and the profoundness of the mental depression has disappeared. You notice that he does not show, in as marked a degree, the attitude spoken of as characteristic of the recent cases, or the profound depression of mind as manifested by the facial expression. Melancholia is of variable duration, say from two to twelve years, and then, if recovery does not occur, the patients gradually drift into a condition of mental enfeeblement or secondary dementia. We are informed by Dr. Rund that this patient is now failing in mental power, and gradually passing into this condition of dementia. Now, in the early history of melancholia there is no failure of mind, but the patient is simply under a delusion that gives rise to the characteristic symptoms of the disease, this delusion of course being based upon the malnutrition of the brain; but the memory and all the ordinary faculties of the mind are as vigorous as before.

The next case of melancholia I present is of shorter duration, and you will see in this patient the usual attitude and facial expression, and the evidences of general psychical disorder. She refuses to eat, for she has the delusion that her food is poisoned. Many cases of melancholia have this delusion to a greater or less degree, and require forcible feeding by means of a stomach or nasal tube to prevent their carrying out the suicidal proclivities. She answers no questions. Some melancholic patients are under the delusion that if they speak, great calamities will befall them or their friends, consequently they will say nothing. She probably has such a delusion.

Melancholia is a very interesting type, from the standpoint of the etiology and treatment of insanity, because almost every case of insanity begins as melancholia, the period of depression lasting in some cases only a few days, in others a few weeks, and then the condition of mania, or other permanent form of insanity, ensues.

Now, if we had the history of these cases, we would probably find that there had been a period of several weeks or months when sleep was imperfect, appetite poor, digestion impaired, and assimilation defective. This being the pathogenesis of most cases, the treatment becomes evident. If you can catch the patients, as will often be your opportunity as family physicians, in the very beginning, when the insomnia, the digestive and assimilative disturbances have commenced, then by the judicious use of sleep-producing remedies, digestive agents, nutritious food, etc., you may be able to arrest the progress of the disease and thus abort insanity. It is your duty as family physicians to watch carefully the digestion, assimilation, and elimination of those who have a neurotic or insane diathesis, for by doing this you may avert the storm.

The medical profession to-day is more fortunate than ever before in the number of sleep-producing remedies. Sulphonal is a comparatively recent remedy of great value. It does not interfere with the digestion, the circulation, or the heart's action as chloral, the bromides, and opium frequently do. We have also the still more recent remedy chloralamid. It has some advantage over sulphonal in that it acts more rapidly, and when dissolved in wine has but little taste. Sulphonal, on the contrary, probably by reason of its great insolubility, often acts slowly, its effects being more manifest the next day than on the evening of its administration. You can often administer either of these remedies without the patient's knowledge, as they have but little taste.

These patients require an abundance of food, and are much benefited by the judicious use of alcoholic stimulants; alcohol, as you are aware, in moderate doses, being a food. A very desirable way to administer it is as eggnog, and three or four, or even five or six, eggnogs in twenty-four hours can be administered to them with benefit. You must also pay attention to their elimination. They need mild laxatives and mild alteratives. Small doses of aloin and blue mass will assist you very materially in keeping the alimentary tract in good condition.

MANIA.

We have before us now a series of cases which illustrate the state of mental exaltation called *mania*. You notice how they differ from the melancholics in their facial expressions and attitudes. They hold their heads up; the corners of their mouths are not drawn down. These patients do not suffer the untold agonies of the other class, and, indeed, are more or less happy. There is but little derangement of the digestive organs. They often smile, and they are in a more or less constant state of movement. Here is activity, while in the other cases you just saw we had the opposite condition. Melancholic patients sit still; they scarcely move a muscle; maniacs are in a state of continual activity.

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In all of these cases of mania there is no enfeeblement of mind, but simply a disorder of mind. Probably most of these cases began with melancholia. For a few days or weeks they were depressed, and then they passed into this condition of activity. These cases, like the others, finally pass into a condition of mental enfeeblement, but more rapidly. They gradually lose their memory, reason, judgment, and power of instituting comparisons as to likenesses and differences of things. Cases of mania usually reach the condition of dementia in a year or two; cases of melancholia may remain as such for five, six, or a dozen years. As a rule, maniacs eat well, but do not sleep well. There is but little derangement of the digestive organs. This condition of continual activity means a great deal of tissue waste, which, associated with poor sleep, causes them to drift more rapidly into a condition of mental enfeeblement than do the others, who spend their time in such quietude of body.

CIRCULAR INSANITY.

The next type of insanity to which I call your attention consists of cases characterized by alternating changes in the mental state, or *circular insanity*, as it is sometimes called. These cases have their periods of depression, followed by intervals of comparative lucidness of mind, to be followed again by a period of depression, and then a period of excitement. We have, therefore, alternations of depression, of excitement, and of lucidness. One form of this mental alternation is called katatonia. The case I now show you illustrates this condition. You see how her arm remains in a fixed position. She is now in what is called the cataleptic state, which every case, of katatonia has for a time. This cataleptic state only lasts for a few days, and we are informed that she sometimes becomes violent. This condition of mental depression will become more and more pronounced as the cataleptic state advances, and after a while she will pass into a condition of violent excitement; then that period of violent excitement will pass away and she will return to her usual mental condition.

Here is another case passing into the cataleptic condition. After a while the catalepsy will pass away and the arms will resume their proper function, when we will have excitement and a period of comparative freedom from manifestation, and then the circle will be completed. The patient has three days of depression, and then three days of excitement, with great regularity. The next patient which you see is in a state of exaltation. This will be followed by depression, which will last for some days or weeks and then pass away, and he will again become excited. Thus do these cases of mental alternation go on completing the round, with little or no prospect of complete recovery.

MONOMANIA.

I will now show you some cases of *monomania*, that form of insanity in which the patients have fixed and limited delusions. Cases of monomania are sometimes very perplexing. The area of delusion may be very slight. There is a large number of these cases going about attending to their business in a fair way. It is only when the delusions become of such a character and of such a range as to make them dangerous to themselves or to the community in which they live, or to interfere with their daily avocations, that it will be necessary for them to come here. Such cases are perplexing, and it is usually almost impossible to make a correct diagnosis, their delusions being limited and the remainder of their mental operations being normal. They can conceal their delusions so that it requires considerable knowledge or expertness to make a diagnosis.

I had one of these cases of limited delusions at my house last night. He talked to me on general topics as well as a man with his education could talk, but with a slight nervousness in his manner and twinkling in the eye. No one would suppose that there was anything the matter with him. But as soon as I touched on religious topics, he assured me that he was the Lord Jesus Christ, and was going to reform the world. He talked for a long time on religious subjects in an insane way, but on any other matter his conversation did not differ from the majority of people. So it is with all these cases of fixed and limited delusions; unless you strike their delusions, you may labor with them for days without success.

The woman on my right has the delusion that she is Prince of the Roman Catholic Order; while the one on my left has communications with spirits. A third regards herself as the King of Sweden.

I have a patient under my care who is perfectly well, except that he will not walk. You cannot get him to walk for fear somebody will knock against his legs and break them.

Here is a patient who thinks her soul will be damned. Upon all other questions she is rational, and there is no special amount of depression in her face.

TERMINAL DEMENTIA.

I will now direct your attention to cases of *terminal dementia*, a disease that begins as mania or melancholia and continues thus for a variable period of time, and then passes into the state of dementia. It takes cases of melancholia a long time to reach this condition of mental fatuity, while cases of mania reach the condition rapidly. Two or three years will be sufficient for a case of mania, while eight or ten years may be necessary for a case of melancholia to undergo the change.

This case now before you was at first one of acute mania, then became one of chronic mania, and then dementia. Her excitement is gone, and with it the mind. Sooner or later she will be in a condition of fatuity. The mental state of these cases of terminal dementia is much like idiocy or imbecility, forms of mental enfeeblement that are the result of an arrest of development. Here there has been a destruction of the brain cells and brain fibres: in idiocy there is insufficient development of cells and fibres.

IDIOCY AND IMBECILITY.

We will now present to you cases of mental enfeeblement due to an arrest of brain growth either before or after birth. Of this form of insanity there are two types, *idiots* and *imbeciles*. The difference between the two conditions is simply one of degree. According to the standard of the English law, an idiot is a person who cannot count ten. These cases of mental enfeeblement have reached this condition because of an arrest of brain growth, not necessarily as a consequence of disease.

The patient on the right is an extreme case of imbe-

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cility, and we might call her an idiot. This woman on my left has manifestly more intellectual capacity than the other and may fittingly be called an imbecile. Many cases of congenital or acquired enfeeblement are characterized not only by failure in the growth of the brain, but by an arrest in body development as well. Some cases of imbecility and idiocy show very marked congenital defects in the growth of the fingers, arms, legs, and teeth.

GENERAL PARESIS.

I now ask your attention to another interesting form of insanity, a type that has a positive pathological basis. Just what the pathological changes of the manias, the melancholias, and of the monomanias are we do not know; but these cases of *general paresis* have a positive pathological substratum on which they rest.

Here is a case of general paresis, paretic dementia, or general paralysis of the insane, a disease that is almost always characterized by grand delusions. This man says he feels first-rate. Notice the peculiarity of his articulation, the thickness of his speech, the excessive movements of his lips in speaking, and the tremor of his tongue. These patients are happy in their delusions as a rule. A few cases of paretic dementia begin with melancholia, and you must remember this in your diagnoses. As a rule the latter are females, and usually of a tubercular diathesis.

Notice the pupils of the patient on my right; one pupil is contracted almost to a pin-point, the other is dilated, and neither responds normally to light. The pupillary condition of the patient on my left is different. Both pupils are dilated, but neither of them responds to the action of light. Some of these cases of general paresis have no pupillary reflex whatever.

The next patient says he has three professions combined in one. He is a decorative painter, a lawyer, and a doctor, and thinks he has cured a great many cases of insanity, and was successful as a lawyer. He believes that he is the richest man in the world. We find in his case diminished pupillary reflex, and one pupil a little more contracted than the other. There is also loss of patellar-tendon reflex, the same peculiarity in articulation, and more pronounced grand delirium.

Here are some cases that show more enfeeblement of both the body and mind. There is more pronounced muscular paresis in this case than in any of the others which I have shown you. This process of deterioration goes on until they become bedridden and completely paralyzed.

The characteristics of these cases of general paresis we may enumerate as grand delirium, delusions of an exalted character, disturbance in articulation, excessive movements of the facial muscles in articulation, usually contracted or dilated pupils not responsive to light, then gradual, progressive enfeeblement, loss of power of mind and body, etc.

These patients, as I have before remarked, have a positive pathological history. They are all cases of *meningo-encephalitis* involving the motor territories of the brain. Some of them in the early stages, I believe, can be greatly benefited by treatment, but when they pass on to this condition of paresis so manifest in two of the cases you have seen, there is nothing whatever that can be done except to make them comfortable. Many of them have a syphilitic history, and if they are treated vigorously with the iodide of potassium and a judicious selection of tonics, mental rest, and counter-irritation by means of blisters the size of a silver dollar over the territory that is the seat of this inflammatory process, some will be greatly improved and a few may recover.

DEFECTIVE INHIBITION.

Here are two cases which illustrate another and very important type of insanity, to which I will ask your attention very briefly, that of *defective inhibition*, a state that is characterized by irresistible impulses. Both of these patients have epilepsy and are homicidal. Without any reason, such patients commit violations of law of various kinds. During this state they are entirely unconscious of what they do. They may manifest their disease by an irresistible or uncontrollable impulse to kill, burn, or steal.

Cases of irresistible impulse are of very great importance from a medico-legal standpoint, and they are often extremely difficult to diagnose. It is common when a person commits some criminal act to plead irresistible impulse, and you will time and again be called upon to determine this condition. If this irresistible impulse is due to disease, surely such persons should not be held responsible for their crimes, but should be carefully put away so that their uncontrollable impulse will not again damage society. Every now and then you will be called upon to determine whether, in a given case, the murder was the consequence of this defective inhibition, the outgrowth of disease, or whether it was simply want of proper moral capacity—a crime and not a disease. I believe that many of these cases of defective inhibition showing a violent fury and uncontrollable impulse are simply a manifestation of the epileptic condition. I have often seen cases in which this impulsiveness took the place of the ordinary convulsive seizure; just about the time when the patients should have a convulsion they do something of an impulsive character. The nerve explosion simply went out through the emotional territories rather than through the motor centres, and instead of having a convulsion they had this manifestation of emotional activity. In making a diagnosis, each case must stand by itself. If a person goes around in broad daylight stealing things that are of no earthly value or service to him, it is certainly not a criminal act. For instance, a man went into a lawyer's office a short time ago and carried off his books and chair. The lawyer went after him, and when he was questioned about it afterward he was entirely unconscious of the act. That man was not responsible for what he had done, for the theft was committed when he was in an epileptic condition.

Here is another case of defective inhibition. The interesting feature about it is the treatment he has had. Notice the color of his skin; he has chronic argyria. The nitrate of silver was given him as a cure for epilepsy. There have been a few cases of epilepsy benefited by the nitrate of silver, which is a stomachic tonic and alterative. This patient, however, took too much of it, hence the blueness of the skin which you notice. He took it for six or seven years. Nitrate of silver is a good remedy, but I do not believe it should ever be given

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continuously for more than ninety days. I am somewhat fearful of its administration for even sixty days. Sixty grains of nitrate of silver are as much as is absolutely safe to give without interruption. The third of a grain is the ordinary dose, and if he took nitrate of silver at that rate for years, he must have taken a large quantity.

The treatment of epilepsy with nitrate of silver is not much in fashion to-day. Nitrate of silver is confined now to such diseases of the nervous system as sclerosis of the spinal cord, especially locomotor ataxia.

70 State Street.

ORIGINAL ARTICLES.

THE OIL-SILK JACKET IN THE TREATMENT OF BRONCHIAL ASTHMA.

By SAMUEL C. BUSEY, M.D., LL.D.,
of Washington, D. C.

The investment of the chest in a jacket made of oil-silk or other impervious fabric, and wadded or not with absorbent cotton or other form of cotton-wool, in the treatment of bronchial and pulmonary diseases, more especially bronchitis and pneumonia, has been in quite common use for many years, but I am not aware that any one has previously suggested such investment of the chest as a method of treatment in cases of bronchial asthma.

The object, therefore, of this brief paper is to present the value of the continuous wearing of an oil-silk jacket as a method of preventing the recurrence of attacks of that form of bronchial asthma which is ascribed to atmospheric conditions, and usually complicated, sooner or later, with more or less bronchial catarrh. To illustrate the effect of this use of this jacket I cite the following cases, which comprise about one-half of the cases to which it has been applied by me with equally beneficial results:

Case I.—Mrs. M., aged forty-three years, the mother of five children, was seized during the winter of 1884 with her first attack of bronchial asthma. During the autumn of 1885 her second attack occurred, and in the winter of 1886 the third. In October, 1886, with the beginning of the first "cold snap," the premonitory symptoms of a fourth attack began. The chest was immediately invested in a jacket, which had been previously prepared at my suggestion. The attack was aborted and no recurrence took place during the autumn and winter months of 1886 and 1887, when the jacket was continuously worn. In like manner she was protected from any attack during the following seasons of 1887–88 and 1888–89. In October, 1889, whilst on a visit to New York, and whilst standing on the high bridge over the East River, her respiration became very laborious, which proved to be the precursor of a pronounced and very severe attack of bronchial asthma. The jacket had not been replaced since the previous spring, and was not put on until near the close of this attack. It was afterward continuously worn until about January 1, 1890, when it was removed because of discomfort incident to the unseasonable and warm weather. Since its last removal she has had numerous very slight attacks of dyspnœa, coming on during the early morning hours, but disappearing after sunrise. None during the time it was worn.

This lady was passing through the period of menstrual decadence, and suffered from some of the usual and other extraordinary nervous conditions, which were mainly referable to the cerebral and circulatory functions, and incident to the change of life, but the asthmatic attacks did not seem to be directly connected with the nervous perturbations.

Only a few days ago she told me that she never had had an attack while wearing the jacket, and that since leaving it off she was frequently very uncomfortable, but would persist in her present course until a more severe seizure occurred. She stated also that the attack last October was induced by the elevation, and that for several years she always has had difficult breathing upon making a visit to Capitol Hill, an elevation of about eighty feet above her residence, and that the attack would be relieved by returning to her home.

Case II.—W. B., aged thirty-two years, was born and lived until he reached maturity in a neighboring county in the State of Maryland, and in a locality near extensive marshes and surrounded by lowlands subject to overflow during heavy rainfalls. At the age of three years, after sudden and prolonged exposure to falling temperature, he was taken with a very bad cold, characterized mainly by great difficulty in breathing. From this date he has been subject to frequent similar attacks, usually occurring during the autumn and winter seasons, and increasing in frequency with growth and age. At the age of twenty years he removed to Baltimore and two years later to this city. While residing in the country he lived an active outdoor life on a farm, but since coming to Washington has passed a sedentary life as a freight clerk in one of the railroad offices, subject to great hardships and exposed to the vicissitudes of the weather and fluctuations of temperature night and day. Since leaving the country the attacks have increased in frequency, duration, and severity, and in June, 1889, for the first time during the summer season, he had a very protracted and distressing attack, and another, equally severe, in September. During the interval between these he had several slight attacks, which did not confine him to the house. In his earlier life the asthma was usually preceded, for a day or two, by sneezing, then a slight cough followed by laborious breathing, usually lasting several days or a week, with remissions during the daytime and recurring paroxysms during the night. Since residing in this city the remissions have been less marked and the night paroxysms more pronounced and distressing. During the last two

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attacks, June and September, 1889, there was no marked difference between day and night, and when they began to subside the improvement was progressive during day and night. During the past five years I have attended him in many attacks, but did not see him in the beginning of any, except those in June and September, 1889. They presented similar clinical pictures of aggravated bronchial asthma, characterized by great dyspnœa, a harassing cough, cyanosis, immobility of chest walls, inability to lie down, sleeplessness, anorexia, with diffuse sibilant and sonorous râles, audible hissing and wheezing sounds, copious fluid expectoration, and bronchial catarrh. During the September attack I had him fitted with an oil-silk jacket, which he has since worn continuously, with renewals every four or six weeks, as has been necessary. He has not had a subsequent attack, notwithstanding greater exposure during a more inclement season and the remarkable prevalence of the recent disastrous epidemic. Thus, for the first time in twenty-nine years, he has escaped an attack of asthma during the late autumn and winter months.

CASE III.—J. M. D., aged five years, a vigorous boy, in good general health, and with a good family history, had, during the spring of 1888, an attack of difficult breathing, with cough, recurring in nightly paroxysms during several consecutive nights, which the physician in attendance pronounced asthma. During the autumn and winter seasons of 1888 and 1889 similar but more aggravated attacks recurred several times, and in October, 1889, he had the last, and the only one that I have seen. At my first visit I ordered the oil-silk jacket, which, with the usual and necessary renewals, has been continuously worn. No attack has occurred since. He has suffered with a moderately severe attack and a less severe relapse of the influenza, but has continued free from any asthmatic conditions.

The etiological relation of atmospheric conditions to bronchial asthma are capricious and variable. Asthmatics are differently affected by apparently similar conditions; some suffering more, some less, and others not at all during the same seasons and when exposed to the same fluctuations of temperature and weather changes. For instance, I know a gentleman who secures absolute relief by changing his sleeping apartment from his residence in this city to the adjoining city of Georgetown, whereas resident asthmatics of the latter city are at the same time suffering; and a second who never had an attack after removing from one residence to another, two squares distant; and a third who was permanently cured by removal from a house, in the cellar of which was a flowing spring of drinking water. It is, I believe, admitted that some city asthmatics find relief by removal to the country, and that country asthmatics sometimes secure relief by city residence. Seasonable conditions are equally variable. During some seasons in the same locality all asthmatics will suffer, at other periods some will suffer and some escape. Some suffer frequently, some annually, and some bi-annually, without apparent cause of difference.

These circumstances point to individual peculiarities and differences in personal and domiciliary hygiene as exciting causes, which must necessarily invalidate the claim of any method of prevention which has not been tested by its application to a large number of victims, during a sufficiently long period of years to include every variety of atmospheric condition and to eliminate all other causes.

It may, therefore, have so happened that the method of treatment was applied to patients during periods when they would have been free from any attack. It is, however, submitted for further and more extensive trial, which will certainly establish its value or prove its uselessness.

THE TREATMENT OF COMPOUND FRACTURES, BASED ON AN ANALYSIS OF ONE THOUSAND CASES.[1]

BY FREDERIC S. DENNIS, M.D.,
OF NEW YORK.

THE subject of this paper is not of my own selection, but is one which has been assigned to me by the esteemed President of the Philadelphia County Medical Society. It is a subject, however, which may be designated as the touchstone of surgery, because a discussion of the treatment of compound fractures includes all the great principles involved in every department of the science. It embraces a consideration of cerebral, thoracic, and abdominal surgery; it includes a discussion of the great principles of antisepsis, it covers operative technique, it embraces the study of surgical pathology, it touches upon the higher departments of the science, and opens up the field where surgery must be considered as an arena for the exercise of sound judgment, for the display of clear foresight, and for the exhibition of accurate knowledge and ripe erudition. Finally, a full discussion of this subject inevitably leads to a consideration of the progress of surgery during the present century and its precise status at the present day.

In considering the management of compound fractures, I shall confine myself to the salient points which an extensive clinical experience has taught me to be the most essential for success. The 1000 cases from which I shall derive material for discussion have occurred during the past decade in four metropolitan hospitals devoted to the treatment of acute surgical cases, and also in private practice. The accumulation of so vast an amount of clinical material has been attended with great clerical labor.

[1] Read by invitation before the Philadelphia County Medical Society, April 9, 1890.

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The conscientious treatment of these serious cases has been attended with a sense of great responsibility, and the results which I shall report have been attained only by close attention to the minutest details in the management of each individual case. There are some points in the treatment of compound fractures that deserve special consideration, and it is only by a study of these cases in groups that clinical facts of essential importance can be established. I have carefully watched the results of the same plan of treatment in many cases at the same time, and it has been by a process of evolution that some of the opinions which I shall enunciate have become fixed laws in routine practice. To see in one day nineteen cases of compound fractures in the same ward with a normal temperature is not a coincidence. The number might possibly be, but the same condition in all is the result of the application of fixed principles which have been established as the result of long study and observation. To see upon another day twelve cases in the same ward and all with normal temperatures, as happened during an unexpected visit of the President of the Philadelphia County Medical Society, removes all question of coincidence. These circumstances make it evident that the application of fixed rules is necessary to arrive at certain and uniform results.

Before entering upon a description of the manner in which the first dressing of a compound fracture should be applied, I desire to call attention to the management of the fracture preparatory to its first dressing in the hospital. The fate of a patient with a compound fracture often hangs upon the surgeon who first touches it. Whenever the circumstances are within the control of the surgeon, I would go still further, and recommend that ambulance surgeons should exercise great care in the transfer of a compound fracture to the hospital. I have made it a rule of practice at the Harlem Hospital that antiseptic irrigation should be employed at the station-house or upon the sidewalk before the temporary splint is adjusted, and that at once after the irrigation, a clean antiseptic dressing be applied before the patient is lifted into the ambulance. I feel sure that the success of treatment in the present list of compound fractures is in great part due to a strict adherence to this important rule. Contrary to my expectations, I have found these directions willingly and cheerfully obeyed by the ambulance surgeons, who now realize how important is their position in the matter of antiseptics.

The patient having been carried either to the hospital or to his home, the temporary dressing is now to be removed, the fracture adjusted, and the first dressing applied. I cannot emphasize too strongly the point that the *first and aseptic dressing will largely influence the prognosis.* This dressing, therefore, should be made in the operating room, because the germ-laden air of the hospital ward is not a safe place to expose a compound fracture. The instruments, sutures, ligatures, drainage-tubes, and everything possibly required for the operation should be immersed in carbolic acid solution (1 to 40). Several towels wrung out in a solution of bichloride of mercury (1 to 500) should be prepared for use about the table and around the limb, in order to protect the fracture from any possible contact with a surface not rendered aseptic. The wound itself should be covered by antiseptic gauze, while the limb is washed with soap and water, then shaved and irrigated. Upon the limb is then poured a saturated solution of naphthalin in ether. This application removes all the fat, and the solution crystallizes upon the surface and protects the parts.

Having made aseptic all the adjacent parts, the wound itself requires attention. All blood and débris should be washed away by a stream of warm bichloride of mercury solution (1 to 4000). The interior of the wound should be thoroughly irrigated with the same solution, and all hæmorrhage completely arrested. Loose pieces of bone not attached to periosteum should be removed. All pieces of fascia, fatty tissue, muscular shreds, and lacerated integument should be cut away with scissors, and then a final ablution made. The drainage-tube should be introduced into the bottom of the wound, and if the wound is so situated as to drain well, there is no necessity for a counter-opening. The tube is then cut off flush with the surface of the skin, and fastened by a safety pin. The wound is now closed by catgut sutures, which completes the operative technique. The towels should now be changed and clean ones substituted, which should also be wrung from bichloride solution. The limb is now in readiness for the application of the antiseptic dressings. This dressing, above described, can be done without an anæsthetic, and as a rule with little or no pain. When the compound fracture is extensive, it is necessary to administer ether, so that the dressing can be completed from the beginning to the end while the patient is under the influence of an anæsthetic. The fragments can now be adjusted, and if the displacement is great, a silver wire can be introduced to keep them in place. Again, it may be necessary to introduce, besides the wire through the bone, some deep catgut sutures, which are carried through the muscles. Deep sutures are necessary in all extensive and gaping wounds of the soft parts, especially when such muscles as the biceps and triceps, or the quadriceps extensor, are divided. These sutures must be independent of the superficial set. Such wounds as just described require free drainage, and counter-open-

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ing is necessary in order to meet the requirements of the case.

Another class of compound fractures is often met where the wound is very small, and with these cases a different plan should be adopted. The irrigation should be made around and in the wound, and then it can be hermetically sealed by sprinkling iodoform over the perforation, and painting styptic collodion over the iodoform, and then irrigating with an antiseptic solution. This mixture will soon coagulate, and the medium of sealing is surgically clean, and then the fracture is ready for the antiseptic dressings. Thus it is evident that the small wounds can be hermetically sealed; the medium sized wounds closed by sutures and drained through the existing opening; and the large wounds drained by a counter-opening and sewed with deep sutures, and the fragments held together by silver wire.

Having completed the operative technique, in one of the three ways mentioned, the parts are now prepared for the antiseptic dressings. Iodoform gauze, or a small piece of oil-silk protective, should be placed over the wound, with a hole cut in it to allow the mouth of the tube to drain into the dressings. Iodoform gauze is used, because bichloride gauze irritates the wound. The bichloride gauze is next applied in loose pieces over the iodoform gauze and around the wound. This dressing is moist because dry antiseptic dressings next to a wound are sources of infection. The loose and wet gauze is held *in situ* by the application of a moist bandage. Over this deep dressing, absorbent cotton is placed and retained by a dry bandage.

The last dressing affords a means of securing equable and uniform compression around the limb and over the fracture. The cotton by its elasticity expands and contracts so as to accommodate itself to the swelling of the parts in the vicinity of the fracture. This part of the dressing is very important as a means of preventing inflammatory swelling and of affording comfort to the patient. Four strips of sheet iron about one inch in width are now adjusted. One strip is to pass down on the posterior part of the limb, and over the heel and upon the sole of the foot. Two strips are placed upon the sides of the leg, and one upon the front of the leg, and bent so as to conform to the shape of the dorsum of the foot. Over these strips, plaster-of-Paris bandages are now applied, and the dressing is completed. The strips prevent any backward as well as any lateral displacement of the fracture, and also do away with the necessity of a heavy splint.

In three days a fenestrum is cut over the wound and under continuous irrigation the drainage-tube is removed.

The question of how long this first dressing should remain is a pertinent one. My experience in the treatment of this injury has taught me that no splint should be left on a limb longer than eight days without an inspection of the compound fracture. I have seen several bad results arising from a neglect of this rule. In one case I saw a fracture which was skilfully dressed with plaster-of-Paris examined at the expiration of six weeks, during which time the patient's condition was in every way satisfactory. Upon removal of the splint the bone was protruding, and considerable union had taken place. An osteotomy corrected the deformity, and in six additional weeks a perfectly satisfactory result followed. If this fracture had been examined the protrusion of the bone would have been detected, and the faulty position rectified. While this result is exceptional, such unfortunate complications can always be obviated by an inspection of the fracture after eight days.

There are some new questions which have arisen, that are of interest when discussed in the light of recent revelations in surgical pathology. Among the many subjects for special study and observation, I have selected a few which seem to me to possess unusual interest in connection with the report of these compound fractures:

1. Meningeal hæmorrhage, and fractures of the base of the skull.
2. Fat embolism.
3. Insanity following fracture of the skull.
4. Malignant disease.
5. Tenotomy.
6. Healing by Schede's method.
7. Amputation.
8. The conversion of simple fractures into compound or complicated fractures.
9. Compound fractures involving the major joints.

1. *Meningeal Hæmorrhage.*—This variety of hæmorrhage occurring in compound fractures of the skull is a subject about which much diversity of opinion exists. It has been the routine treatment for many years to ligate the common or external carotid artery in case of severe hæmorrhage from the middle meningeal artery or one of its large branches.

Among the cases in my list of compound fractures of the skull is one which is of great practical interest as bearing upon a new method of arresting hæmorrhage. In the case referred to, a man received a severe compound fracture of the skull upon the right side of the head, followed by paralysis of the left side of the body. The accident was caused by a stone weighing 700 pounds falling upon his skull. I trephined the seat of fracture, and removed over forty pieces of bone, which were loose in the wound, of which two fragments were larger than a twenty-five cent piece. I also found a large epidural blood-

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clot, nearly the size of the palm of my hand. I removed the blood-clot, and found the middle meningeal artery bleeding to an alarming extent. The hæmorrhage was controlled temporarily with sponges and tampons, until I was able to remove more bone in order to secure the open vessel. Having removed bone to the extent of six inches, I attempted with artery forceps to seize the bleeding point. Every attempt failed, and I was unable to grasp the artery because, whenever the ends of the forceps were applied to the dura, this membrane was pushed down, and the forceps could not be made to catch hold of the bleeding point. The idea suggested itself to me in this crisis to introduce the point of a tenaculum through the membrane in such a way as to include the bleeding vessel in the curve of the tenaculum. With this instrument I now raised up the dura from the brain on a level with the bone, and then applied the artery forceps. The membrane, which before receded from the grasp of the forceps, and formed a tense, concave surface, was now held firmly, and that part between the curve of the tenaculum was lax, and permitted the forceps to seize tissue and artery. The vessel was tied with catgut, and the hæmorrhage was arrested. The paralysis upon the left side of the body disappeared. The wound healed in an aseptic manner, and the patient recovered so far as the operation was concerned. He died some time after the injury, and I was enabled to secure an autopsy, which was made by Dr. Grauer. There was nothing in the brain, or in its coverings, which could have caused death; the patient had died from exhaustion and inanition, with no local brain lesion. The use of the tenaculum in the manner described—to seize a torn middle meningeal artery through an opening made in the skull—seems to me a better operation than ligation of the external or common carotid artery in its continuity. Besides the question of the arrest of hæmorrhage by ligation of the meningeal artery by means of a tenaculum, another question has arisen in connection with these cases of meningeal hæmorrhage; that is, the possibility of a surface clot by *contre-coup*, the existence of which has been denied by many surgeons. I have three specimens, which I believe will settle this long-disputed question.

In the first of these cases, a policeman found the man in a condition of what was supposed to be intoxication. He walked to the station-house with the officer and was locked up for the night, and upon the following morning was brought before the police justice and sentenced to ten days' confinement on account of intoxication. At eleven o'clock he was returned to the station-house, awaiting the time to be sent to the Island. While in the cell, a few minutes after his arrival, he became unconscious; an ambulance was summoned, and he was taken to the Ninety-ninth Street Hospital. I saw the patient that day, and from the peculiar history of the case and the presence of paralysis, I diagnosed meningeal hæmorrhage. The patient was anæsthetized, and the uninjured scalp was incised, exposing to view a linear fracture. The trephine was applied, and an epidural clot was discovered. The dura was torn, and the brain substance lacerated. The wound was dressed antiseptically. In fourteen hours the patient died. The autopsy revealed the presence of a second epidural clot, which was almost opposite, and was the result of *contre-coup*. The scalp over the skull corresponding to this clot was normal, as was the scalp upon the opposite side, and the bone over the *contre-coup* clot was not injured.

The second case was brought to the hospital in an unconscious condition with general paralysis. The case was supposed to be a fracture at the base of the skull. The patient died the next day, and the autopsy showed a linear fracture of the parietal bone upon one side and extending to the middle fossa. Under the fracture was a large epidural clot, and upon removing the calvarium another surface clot was found at a point directly opposite to the fracture. This fracture did not extend upon the other side of the skull, and the clot here was also the result of an injury by *contre-coup*.

I have seen during the past winter another case similar to the two just described. These three specimens settle the important question whether a meningeal hæmorrhage may be produced by *contre-coup*. The diagnostic points of epidural meningeal hæmorrhage by *contre-coup*, or by traumatism without fracture, suggest operative interference in these cases.

The presence of symptoms of cerebral irritation followed by unilateral paralysis, with a slow, full pulse, the Cheyne-Stokes respiration, accompanied by a sudden rise of the temperature due to disturbance of the heat centre, form a group of symptoms which, if preceded by a short interval of lucidity after the injury in which no serious manifestations of brain lesion were present, make it extremely probable that an intracranial meningeal hæmorrhage has occurred.

These symptoms appearing at the time, and in the order mentioned, with or without any fracture, would indicate the application of the trephine over the seat of pressure, the removal of the clot, and the ligation of the middle meningeal artery through the opening made in the skull by means of a tenaculum applied in the manner already described. To some this may seem too bold; but when the fact is considered that formerly nine-tenths of these cases perished under the expectant plan of treatment, and further when it is considered how safe the operation of trephining is with antiseptics, it would seem that a surgeon might be derelict in his duty if

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he did not remove a portion of the skull to take away the clot and arrest the bleeding. Within ten days I have trephined and removed a clot from the right ventricle. This is the first time that a clot from the ventricle has been removed, and I trust that this case may be a precursor for the relief of apoplexy.

Fracture of the base of the skull has been one of those injuries which the surgeon has treated purely upon the expectant plan, and with the conviction that death is sure to follow. This view of the lesion has been entertained for years by hospital surgeons, and there is certainly a consensus of opinion among surgical writers in regard to the prognosis. All standard text-books and monographs are in accord in reference to the mortality. During the past few years my attention has been especially directed to a study of these cases of basilar fracture, and I shall endeavor to demonstrate here that fractures of the base of the skull are amenable to surgical treatment. I shall also endeavor to point out the clinical fact that the great majority of these cases die from causes which can be wholly prevented by the surgeon. There has been but little encouragement to the surgeon to attempt any treatment in these cases of basilar fracture, when one reads in the latest edition of a large standard work on surgery, "that any treatment directed to the lesion itself is out of the question." I trust that I can demonstrate the incorrectness of this view, which represents the opinions of most surgical authors. This is not the time or the place to enter upon the discussion of the signs and symptoms of fracture of the base, which would require too great a digression from the title of the present paper.

With a view to simplifying the general subject of basilar fractures, I shall advance two propositions, and shall attempt to prove the correctness of these propositions:

First. That fractures of the base of the skull should be considered in the same category as compound fractures of the vertex of the skull or of the long bones.

Second. That since fractures of the base of the skull possess the same essential characteristics as other compound fractures, they should therefore be treated by the same exact principles of aseptic surgery.

Some surgeons may dissent from the first proposition, viz.: that a basilar fracture should be considered in the same light as a vertex fracture. It is evident, however, that every compound fracture has air admitted to the seat of the fracture, and that this is the case in fractures of the base of the skull. If the anterior fossa is the seat of lesion, air gains entrance to the fracture through the nasal cavities. If the middle and posterior fossæ are involved, air gains access either by the external auditory meatus, or by the Eustachian tube through the pharynx and nasal cavity. The entrance of air to the seat of fracture, which is a *sine qua non* for the existence of a compound fracture, is not the only point that basilar fractures possess in common with all other compound fractures. The basilar fracture is associated with hæmorrhage, laceration of nerves, venous thrombosis, septic phlebitis, fat embolism, cerebro-spinal shock, pyæmia, septicæmia, and abscesses; and, in fact, with all the complications that arise in connection with other compound fractures. Even the cerebral lesion is not confined to basilar fractures, because it occurs in fractures of the vertex. It is thus evident that fractures of the base do not differ in any essential particular. The view may be even advanced that the cerebral lesions in vertex fractures may be more severe than in basilar fractures, because in the latter the cerebro-spinal fluid, in a measure, protects the brain from concussion and thus diminishes the shock.

A discussion of the second proposition brings us to a consideration of the treatment of compound fractures in general. The technique is simple. Every patient suffering from fracture of the base, if the immediate shock is not too profound, should be removed to the operating-room. Every outside preparation having been made to make the toilet aseptic, the head should be held firmly and the entire scalp shaved, after which it should be thoroughly washed with soap and water, and then irrigated with a 1 to 500 bichloride of mercury solution. Attention should next be directed to the irrigation of the external auditory canal and the nasal cavities. Both of these should be rendered thoroughly aseptic, after which the ears should be packed with iodoform or bichloride gauze, and some absorbent cotton plugs placed in the nose. The air can filter through cotton, but microörganisms cannot pass through it. In irrigating the nasal fossæ the surgeon must exercise great care, lest the fluid enter the stomach and produce toxic effects. There remains now only one other possible channel of infection to the seat of fracture, and that is the Eustachian tube. This may carry sepsis to the interior of the cranial cavity in a fracture of the base. The arrangement of the ciliæ in the tube is such as to propel air and mucus *toward* the nasal cavity; but during the act of deglutition the current may be reversed, and infection thus reach the base of the brain. In the ordinary form of fracture of the base, where the membrana tympani is ruptured, the discharges make their exit through the auditory canal. In the exceptional cases where the membrane is not ruptured, the serum, blood, and cerebro-spinal fluid find their way into the nasal cavity and the pharynx, and thus these cases are most exposed to sepsis. If

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the unruptured membrana tympani is examined in a basilar fracture, the membrane will be seen puffed out on account of the presence of fluid behind it, and the membrane will have lost its natural lustre. These are the circumstances under which it may be wise to puncture the membrana tympani, and thus allow the blood and the cerebro-spinal fluid to escape through the external auditory canal. The diversion of the discharges from the Eustachian tube into the ear makes it possible to keep the fluids permanently aseptic. Having now rendered the head and all the avenues of approach to the intracranial cavity surgically clean, it remains to apply a dressing that will keep these parts permanently free from any source of infection. This object is best accomplished by the use of a cap made of wet, loose bichloride gauze or carbolized wool, over which absorbent cotton and a plaster-of-Paris bandage are applied. The cap should completely surround the entire head, cover in the ears, and protect every channel leading down to, and communicating with, the seat of fracture. The cerebral viscera are thus protected from the entrance of septic germs. This same dressing should be made from time to time during the repair of the fracture, and under the same strict and rigid rules of antiseptic surgery.

The reasons for dressing fractures of the base of the skull with a scrupulous attention to the minutest detail in antiseptic surgery are at once obvious. If a patient survives the immediate shock of the fracture, and lives twenty-four hours, he is almost certain to die from causes which can be directly attributed to sepsis. Among these causes may be mentioned basilar meningitis, cerebral abscess, pyæmia, suppuration in the petrous portion of the temporal bone, septic phlebitis, encephalitis, leptomeningitis, and other complications due to infection.

If the surrounding parts and the discharges are kept aseptic then sepsis cannot occur, and this removes at once all the causes of death due to septopyæmia. I do not pretend to state that it is impossible for a patient with fracture of the base to die except from a cause due to sepsis; but I do state that nearly all these cases terminate fatally from causes which are due to sepsis. A reference to statistics will demonstrate that deaths occurring in fractures of the base of the skull, independent of shock or sepsis, are extremely rare, and that nearly all these cases die, therefore, from causes which can be prevented by the surgeon. I would go even further, and recommend that all cases of head injury with hæmorrhage from the ear, or from the nose, be treated with antiseptic precautions. I have seen many cases where a fracture of the base of the skull did not exist, but where a hæmorrhage was present from the ear or the nose, and in the course of ten days a fatal meningitis developed. Every practical surgeon can recall such cases as I have mentioned, and I believe that the meningitis has its origin in septic contamination of the hæmorrhagic or other discharges. The old and good rule in surgery, "Never to look lightly on any injury of the head, however trifling it may appear," is one that, if strictly observed, may be a means of saving life where otherwise that life may be sacrificed. During the past few years I have seen a large number of cases of basilar fractures. Most of these cases died from shock within twenty-four hours; but recently, I have had the satisfaction of seeing six cases recover under the plan of treatment just described. By placing basilar fractures in the same category as compound fractures, and treating them as such, there is a prospect of recovery in cases which have been hitherto considered fatal. If fractures of the base can be saved, it is another triumph of antiseptic surgery, which but recently was thought impossible. These six cases of fracture of the base are not included in the list of one thousand cases, as they have been separately published in the *Transactions of the New York Academy of Medicine*. If, however, these cases were introduced, under the same conditions as the other compound fractures, the mortality would be affected only in favor of its fractional diminution.

2. *Fat Embolism.*—This interesting complication was first fully described by Wagner and Zenker. Fat embolism means the entrance of fluid fat from the medulla of the bone into the veins in the immediate vicinity of the fracture, and through these channels into the capillaries of the brain, spinal cord, lungs, kidneys, and other essential organs. The presence of fluid fat in the blood was described in 1836 by Dr. R. W. Smith, but the clinical importance of this condition was not investigated until recently by Bergmann, Czerny, and Scriba. Dejerine has experimentally produced fat embolism in the lower animals by inserting laminaria-tents into the medullary cavity of the bone. The symptoms of fat embolism are present within the first three days as a rule, and resemble those of secondary shock. They occur before the time at which venous thrombosis or pulmonary embolism would be expected to appear. Great dyspnœa associated with the Cheyne-Stokes respiration, irregularity of the heart with a sudden rise of temperature, together with twitching of the muscles, as well as paralysis of certain muscles, have been observed in these cases. There have been no metastatic abscesses discovered where an autopsy has been made. I have found an abundance of fat globules following the train of symptoms just mentioned. This group of symptoms must not be mistaken for shock following fracture, nor for pulmonary embolism. Shock may

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be said to be present *three hours* after the fracture, fat embolism *three days* after, and pulmonary embolism *three weeks* after. For convenience, I have arranged these complications in the order in which they are most likely to occur, and by associating these conditions, which simulate each other, with the time at which they appear, no mistake in diagnosis is likely to arise.

3. *Insanity following Fracture of the Skull.*—There have been a good many cases of insanity following traumatism of the head, and this is generally accepted by specialists in nervous diseases. I have at present under observation a case of insanity, one of imbecility, and one of idiocy, all resulting from traumatism of the skull; also a case in which there was severe and persistent headache, extending over a period of six years, in which I trephined over the site of a previous fracture, and found the dura thickened and the seat of a pachymeningitis. I removed the depressed bone, which relieved the intracranial pressure, and the patient has never had any return of the agonizing pain in her head, and her mental condition seems normal. In cases of traumatic epilepsy attended with more or less mental disturbance, I have used the trephine with most excellent results. I am aware that trephining is not uniformly successful in epilepsy, and my own experience has led me to expect little from the operation in those cases where there is not a well-marked depression produced by a fracture. There is a case reported by Dr. MacDonald, in which insanity followed a compound fracture of the skull, and also a case reported by Dr. Macewen, of Glasgow. Both of these patients recovered after trephining. Schroeter mentions a case where a patient became insane on account of a fracture of the skull. Dr. Spitzka gave me the notes of another patient who became insane after a depressed fracture of the skull produced by the explosion of a shell at the battle of Bull Run.

Many other cases might be found where the cause of insanity is due to an old and unrelieved depressed fracture. In all these cases depression existed, hence the importance of elevating at the time of the accident, even though no symptoms exist.

The kind of insanity which follows in these traumatic cases is that form which is attended with great irritability and mental excitement, and which is also accompanied by fits of violent temper and passion. These phenomena are suggestive in depressed fracture, and call for surgical interference in a class of cases where, until recently, no relief could be extended to the sufferers.

The part of the head injured seems to exert a causative influence upon the development of insanity. Dr. Garmany has pointed out the interesting clinical fact, that insanity follows in fifty per cent. of the cases of traumatic epilepsy where the injury involves the frontal or parietal regions. The same writer has also demonstrated that an irritative, rather than a destructive, lesion is the cause of insanity. As irritative lesions are largely due to the effects of traumatism, it follows that all cases of compound fractures of the skull should be treated by rendering the wound aseptic by operative interference, even in the absence of any symptoms.

The suggestion of enlarging the field of operative surgery of the skull, so as to trephine in cases where there are no symptoms, for the purpose of preventing insanity, may seem at first too radical. When, however, it is considered that the operation of trephining in this list is attended with a mortality of a fraction of one per cent., it seems justifiable in all cases to trephine in order to prevent insanity, if for no other reason. A still further extension of the field of operative surgery of the head has been recently made by Mr. Horsley to include trephining for the relief of general paresis. The object is to remove some of the arachnoid fluid, and thus relieve intra-cranial pressure. To what extent this operation will afford relief is at yet *sub judice*.

4. *Malignant Disease.*—The question of the development of malignant tumors at the seat of fracture is an exceedingly important one in surgical pathology. The late Dr. S. D. Gross pointed out the important fact, that almost half of the cases of malignant bone disease can be traced to traumatism. His valuable contribution upon this point is worthy of careful study. I have been able to verify in my own experience his conclusions.

I recently operated upon a child with an immense sarcoma upon the occiput. The child had sustained a heavy fall upon the back of the head six months previous, followed at once by the development of a large hæmatoma. The hæmatoma was not incised, and a linear fracture existed beneath it. For some weeks after the injury there was nothing special excepting the presence of the hæmatoma; but the tumor then began to grow very rapidly, and in less than six months from the receipt of the injury the sarcoma was much larger than the child's head. The patient died some weeks after an incomplete operation for its removal. I have many beautiful specimens illustrating the clinical fact that a fracture may be the starting-point of this variety of tumor.

The prognosis of sarcoma affecting bone as a result of fracture, while grave, is not necessarily fatal, provided the tumor is recognized before glandular swelling appears and the operation is performed early and includes the tissues far from the seat of disease. This subject of the influence of fracture upon the development of sarcoma is one on which no extensive investigation has as yet been made,

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and it is one which offers a rich field for original research.

Epithelioma also may develop indirectly as a result of a compound fracture; but this malignant growth has its origin from the soft tissues in connection with a sinus leading down to necrosed bone. If a sinus is not healed it becomes lined with epithelium, and a discharge of ichorous pus through it from time to time sets up an irritation with a proliferation of epithelial cells, and epithelioma may in this way secondarily develop. While the epithelioma is not directly connected with the seat of fracture, as is the case in sarcoma, nevertheless, the disease may have its origin in conditions arising from sequestration in a compound fracture. The closure of sinuses in connection with necrosis following a fracture should always be aimed at by the surgeon.

5. *Tenotomy.*—Six years ago I called attention to this procedure in the treatment of compound fractures, and in a number of cases since then I have been impressed with the value of the operation in all oblique compound fractures. Tenotomy relieves at once any contraction of the muscles, permits the fragments to be placed in accurate coaptation, and secures physiological rest to the fracture. It affords also great comfort to the patient, and is a valuable means of fixation during the first ten days. Tenotomy may be employed upon the tendo-Achillis, upon the hamstring muscles, upon the tendons of the arm and forearm, and even upon the sterno-cleido-mastoid muscle in fractures of the clavicle. I believe there is much to be gained by the adoption of this simple procedure in overcoming muscular spasm in compound fractures of the extremities where there is difficulty in reduction, and I cannot too highly commend it as a means of overcoming the obstacles to the reduction of fractures. In several cases of compound fracture of the tibia, where the solution was parallel with the long axis of the bone, with considerable separation, I found that a horseshoe tourniquet was a most valuable instrument in closing the long fissure. The instrument by pressure overcomes the vertical separation, just as tenotomy by relaxation overcomes the oblique displacement. The pad can be applied upon one side of the bone and pressure be made by applying the other pad over a thick plaster bandage. The screw can be gradually tightened, and in a few days the bone can be approximated and the instrument discarded. This is a safe and more satisfactory instrument than the apparatus devised by Malgaigne. I have found that muscular spasms can in most cases be overcome by position. Relaxation of the muscles will always relieve the spasm. The use of sulphonal, as well as many other drugs, has been suggested, but I have never seen a case where relaxing the muscles did not relieve the condition.

6. *Healing by Schede's Method.*—In a number of severe cases of compound fractures of the leg and skull I have observed some beautiful illustrations of this newly described method of repair. It has usually been taught that blood-clots in wounds are obstacles to repair by primary intention, and that these clots act as foreign bodies. In one case of severe compound fracture there was great hæmorrhage between the fragments, and the large space between them was filled with fluid blood and clots. I divided the tendo-Achillis to overcome the contraction of the muscle, which permitted the fragments to be brought into perfect apposition. The wound was then dressed with the most rigid aseptic precaution, and the blood-clots became organized and furnished a most valuable medium of union. The fracture healed by primary intention, and the patient made an excellent recovery.

Fluid blood and clots, if perfectly aseptic, are valuable adjuncts to the repair of compound fractures. They are, however, most potent sources of evil if any infection reaches the clot through carelessness of the surgeon. It is a most valuable contribution to the treatment of compound fractures, if the blood which escapes between the ends of the fragments can be in the future utilized as a means of hastening and perfecting union by primary intention. The reason why so important a principle in surgical pathology has been so long unknown, is explained by the fact that blood-clots, until rigid asepsis was established, were recognized sources of septic inflammation. If all the surrounding parts in every compound fracture are made aseptic, clots and fluid blood can be utilized for the purpose of healing. Anything short of absolute surgical cleanliness will convert these clots and the blood into dangerous agents of infection.

7. *Amputation.*—Amputation of the limb in compound fracture was formerly resorted to with great frequency in hospital practice. Before the introduction of antiseptics, pyæmia destroyed the life of almost every patient suffering from compound fracture who was brought to a large metropolitan hospital. The time is within my own recollection when, in Bellevue Hospital, amputation was immediately performed as a routine treatment to prevent blood-poisoning, upon the admittance of a compound fracture; and this operation was considered by surgeons as offering to the patient the only chance of recovery. At the present time limbs are saved which would then have been sacrificed, and it is a rare event to witness an amputation in compound fracture. Extensive fracture of the bone with protrusion of the fragments through the soft structures would not now form an indication for

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amputation, unless the soft structures were badly lacerated. Formerly the loss of a few inches of the bone called for primary amputation; but this no longer offers an indication, for the bones are brought together by silver wire, and though the limb may be shorter than its fellow, the member is still retained, and elevation of the shoe compensates for any slight irregularity in the gait. In one case which I treated, where four inches of the tibia were removed, the patient made an excellent recovery.

The limits to which amputation in compound fracture may be resorted to are exceedingly narrow and restricted, and this conspicuous clinical fact is one of the most notable steps in the advance of modern surgery. Another important point in reference to amputation in compound fracture is the proper line of treatment to be pursued up to the time of the operation. It often happens that a patient is suffering too profoundly from shock to make it expedient to amputate. In these cases great benefit is to be derived from deferring the amputation even many days, until the condition is such as to justify the operation. Formerly this could not be practised without subjecting the patient to a greater risk from septic infection than would be incurred by an amputation during shock. If the wound is at once made aseptic, and compresses be placed over the fracture to control the hæmorrhage, and these compresses do not extend higher than the wound itself, the amputation can be deferred. It is important that these compresses be applied only over the wound, and that no tourniquet or any other form of compression be applied to the limb in the continuity of the artery above the injured part, for if this is done, there is danger of gangrene in the flaps after the amputation. In one case gangrene followed an amputation of the leg where a tourniquet had been placed over the femoral artery. This patient was brought to the hospital from a neighboring town with a tourniquet upon the femoral artery for the purpose of arresting hæmorrhage in a compound fracture of the leg. There can of course be no blame attached to the hospital authorities for a mistake which occurred before the patient was received into the hospital, but I call attention to the case in order to emphasize forcibly this point.

8. *The Conversion of Simple Fractures into Compound or Complicated Fractures.*—By this is not meant the conversion of a simple into a compound fracture on account of the bone thrusting itself through the integument at the time of the accident. This may happen, especially when the muscular spasm is great, or during the transportation of a patient suffering from a simple fracture. What is meant, however, is the spontaneous conversion by means of the necrosis of a small fragment. An abscess subsequently forms and pus is set free, and the seat of fracture is exposed to the atmosphere. I have seen, for example, a Pott's fracture—that is to say, a fracture of the fibula three inches above the tip of the external malleolus, with a laceration of the deltoid ligament—converted after several weeks into a typical compound and complicated fracture, owing to the necrosis of the distal fragment. Suppurative arthritis of the ankle-joint ensued with caries of the astragalus. The ankle-joint was opened, the carious fragments removed, the joint freely irrigated, and an antiseptic dressing applied. The patient recovered in a few weeks with a useful joint. The possibility of nature transforming a simple fracture into a complicated one must not be overlooked. In such cases prompt surgical interference may arrest the progress of the disease, and effect perfect restoration of a joint, otherwise this complication leads to irreparable damage, if not to loss of life.

9. *Compound Fractures Involving Major Joints.*—The treatment of compound fractures involving major joints has been entirely revolutionized since the introduction of aseptic surgery. The criticism I would offer upon the general management of these cases, is, that too little conservatism of one kind, and too great radicalism of another kind, are simultaneously practised. The bad results in fracture-dislocations are due in a large measure to a want of rigid asepsis on the one hand, and a too extensive operative interference on the other. For example, the joint may not be rendered thoroughly aseptic at the beginning, but may be extensively interfered with as regards operative procedures.

In the one hundred and seventy-one compound fractures involving joints, recorded in my one thousand cases, the results as regards the usefulness of the joint have been in nearly all the cases perfect. To have a compound fracture-dislocation of the ankle-, knee-, elbow- or shoulder-joint, repair with complete restoration of function, is the aim of the surgeon. In one of my cases, the astragalus extruded from the joint and was re-inserted, and perfect movement of the joint followed. These ideal results are to be obtained only by the exercise of great care. In all fracture-dislocations the joint should be immediatly rendered absolutely aseptic by thorough irrigation. The drainage should be entirely across the joint, otherwise a pocket for the retention of inflammatory exudates is sure to form in the fold of the capsule. These products under certain conditions are sources of great danger. A careful study of cases of fracture-dislocation reveals the history of an abscess formation weeks after, upon the side of the joint opposite to the original wound. This complication, so often reported, is obviated by free drainage. It is not sufficient to drain one side only, and that side through the original opening into the joint; but the tube must pass entirely

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through and across the joint. Physiological rest for many weeks must then be secured, and no passive motion employed for at least six weeks. Passive motion too early employed has often excited inflammation which has led to suppurative arthritis. Active motion must follow in its turn, but not for some time after the employment of the passive motion and massage. A proper sequence in the employment of these different agencies is most important in order to reach an ideal result.

The complete history of the one thousand cases of compound fractures I have here before me. Each case is given in full with the name of the patient, the date of his or her admittance to the hospital, the age, a description of the injury, the treatment in full, and the result, together with the name of the house-surgeon on duty at the time as a matter of reference. I have also most of the temperature charts, and in bottles the pieces of skull which have been preserved, and labelled to correspond to the cases given in the table.[1] It is obvious that time will not permit the detailing of these histories, and therefore I can only give a summary.

The general summary in the one thousand cases is as follows:

Skull	178
Nasal, malar, maxillæ and patellæ	89
Arm	40
Forearm	41
Fingers and toes	97
Ilium, clavicle	2
Thigh	87
Leg	295
Fractures involving shoulder-, elbow-, or wrist-joints as a result of disease or accident	39
Fractures involving hip-, knee-, or ankle-joints as a result of disease or accident	85
Fractures involving carpal or metacarpal, tarsal or metatarsal joints as a result of disease or accident	47
	1000

Now, following the example of surgical writers who have carefully tabulated the results of treatment in compound fractures, I shall eliminate all those cases in which primary amputations were performed, because they do not concern the point at issue; and I shall also, according to the practice of writers, reject all those cases which died of hæmorrhage, collapse, shock, etc., within forty-eight hours, although most of the cases died within a few hours after injury. I shall also leave out cases of compound fractures of the hand and foot, as too insignificant to be classed with compound fractures of the long bones or of the skull.

In the total of one thousand consecutive and, of course, unselected cases of compound fractures, produced by traumatism or by operation, there were 101 deaths, 60 primary amputations, and 4 cases where the results were unknown on account of the removal of the patients from the hospital, at their own request, immediately after their admittance. In the 101 deaths, 82 died within forty-eight hours after the accident and during shock, and consequently these deaths should not be included in any figures to ascertain the percentage of mortality, because the patients died before any plan of treatment could be adopted having reference to the repair of the fracture or to the prevention of septic infection.

The remaining nineteen deaths occurred from the following causes: One from tuberculous meningitis following some weeks after a resection of the hip-joint, so that this case died from other causes than septic infection; another from uræmia in chronic Bright's disease one week after wiring the patella. The wound was, however, healed and perfectly aseptic, so that this case died from other causes than septic infection. Another died one month after trephining, from exhaustion and inanition, with the wound perfectly healed by primary intention, and, as shown by the autopsy, with no evidences in the brain of the pathological changes of sepsis, so that death in this case cannot be attributed to septic infection. Two other cases died from irreparable damage to the brain, in one of which the lock of a gun was driven through the skull into the brain, and in the other a fracture at the base was found at the autopsy in addition to the fracture of the parietal bone, so that death in neither of these two cases was due to pyæmia or septicæmia. Four other cases died from cerebral softening, which was situated at a distance from the original wound.

In reference to these cases of cerebral softening following injuries, a word of explanation seems pertinent. The circumscribed areas of softening in every respect resembled the changes which are found after apoplexy. There was no local evidence of septic infection, and in all the four cases the autopsies were made by experienced pathologists. The situation of the softened areas at a point distant from the original wound, the changes, *i. e.*, hæmorrhage and softening, and the perfect aseptic and healed condition of the external wounds, indicate that these cases are not of septic origin from the wound, but that they are changes identical with those which are found in cases of cerebral apoplexy. The cerebral softening appears to be due to a molecular disintegration or laceration of brain tissue from traumatism, and this disturbance of the nutrition produces a metamorphosis and liquefaction. The external surface of the dura seems to possess power to prevent the entrance of septic microorganisms into the cerebral substance; while the

[1] Dr. Dennis exhibited some of the bones of the leg, thigh, arm, and forearm in which amputation was performed, also the pieces of bones from the joints, which pieces were removed by resection.

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internal surface of the dura, owing to its proximity to the arachnoid space, is exceedingly delicate and affected by the slightest amount of septic material. Experimental work in this direction indicates that such points of softening may have their origin in traumatism, and are not necessarily due to sepsis. To convince myself further of the accuracy of this conclusion I trephined the skull of a dog, and planted upon its dura septic micrococci, which were furnished to me from cultures by Dr. Biggs. Though the microörganisms were septic, they were incapable of developing cerebral abscess through the dura or even producing a meningitis.

Such an experiment, while it is not conclusive, of course carries additional evidence in favor of the non-septic origin of such cerebral softenings, though they may be due to the presence of some such micro-organism as the bacillus tuberculosis; but at the same time the traumatism may have acted as an exciting cause to develop an abscess in tissue already impregnated with pathogenic germs. This explanation places a higher value upon antiseptic surgery, and it also serves to illustrate that an operation like trephining may be a brilliant success, so far as the operation is concerned, but that the patient may perish from causes which are as yet beyond the complete control of the surgeon.

This is still an unoccupied field for investigation and research, and surgeons must turn the direction of their studies to those causes of death which are not connected with the details of antiseptic surgery. Perfection has been almost reached in the technique of the operation of trephining, but as yet there are circumstances which are not controlled by the practical surgeon, and in a study of these causes future scientific surgery must engage.

Returning again to the list of nineteen deaths after this brief digression, one case died from diphtheria after the external wound of the compound fracture had healed. The wound was aseptic and was never the seat of any disturbance, and as the diphtheria affected the larynx and trachea the cause of death was in no way connected with the fracture, although, of course, the time was too short to have the bone firmly united. One case of compound fracture of the skull died on the fifth day, but in this case the patient was suffering from a fracture of the spine which caused his death by myelitis. One case died within forty-eight hours after admittance, from cerebral abscess connected with a punctured fracture of the skull, which had been operated upon two weeks previous by a surgeon in a neighboring town. During the patient's sojourn in the hospital, he was trephined and seven ounces of pus were evacuated from the brain, but he died a few hours later. This case is excluded on the ground that the patient's injury was not treated in the hospital, and that he did not enter the hospital until within forty-eight hours of his death. The death was clearly due to sepsis, but the circumstances were such as to relieve the hospital surgeon from all responsibility.

One case died after forty-eight hours, but it was a case of primary amputation. The patient was run over by a locomotive; both feet were crushed and the hanging toes were removed as soon as his condition would permit. One case similar to the last died from a crushed foot ninety hours after the accident. The patient was over sixty years of age, and never reacted from the shock. The remaining case of death was due to leptomeningitis, which occurred fifty-two hours after trephining. This case was due to sepsis.

Finally, in order to arrive at the mortality in this list of one thousand compound fractures, there must be deducted from the original one thousand cases 60 primary amputations, because no treatment of the fracture itself was undertaken; 82 deaths from shock occurring within forty-eight hours, because no treatment was begun; 4 cases where the result is unknown because the patients left the hospital of their own accord; 155 cases of compound fractures of the fingers and toes, because they are too insignificant; also 18 cases just mentioned in detail. There then remain 681 cases of compound fractures with *one death due to sepsis*. This gives a death-rate of about one-seventh of one per cent. In order to appreciate fully what aseptic surgery has accomplished in reference to the management of compound fractures, it is necessary to compare the results obtained prior to the introduction of antiseptic surgery. In the Pennsylvania Hospital, Norris has made a statistical report of the compound fractures treated between the years 1839 and 1851. During that time there were 116 cases of compound fractures of the leg and thigh (excluding those cases requiring amputation) with 51 deaths, thus giving a rate of mortality of forty-four per cent.

In the New York Hospital during the same period there were treated 126 cases of compound fractures of the leg and thigh (excluding those cases requiring amputation) with 61 deaths, giving a rate of mortality of forty-eight per cent. If a comparison is now made between the tables just mentioned and my list of one thousand cases, the mortality falls from forty-eight per cent. to a cipher. In the Obuchow Hospital Reports of St. Petersburgh there are 106 cases of compound fracture with a mortality of sixty-eight per cent. No particulars are given in this high death-rate.

In Guy's Hospital, from 1841 to 1861, there were reported 208 cases of compound fractures, with 56 deaths, giving a mortality of about 28 per cent. Billroth reports from the surgical clinics of Vienna

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and Zurich 180 cases of compound fractures (excluding cases of amputation), with a mortality of 31 per cent. from septo-pyæmia. Now, after the introduction of antiseptics, a study of Billroth's table of compound fractures shows a reduction in the death-rate to about 3 per cent. The influence, therefore, of antiseptics has caused the death-rate to fall from 26 to 68 per cent. to about 3 per cent. In the present report of one thousand cases, if we compare the fractures of the extremities only, as has been done in all of the above tables, there is no death from septo-pyæmia, and thus the rate of mortality from blood poisoning is now reduced from 68 per cent. to a cipher. It may be said, therefore, that pyæmia and septicæmia, which formerly destroyed as many as 68 per cent. of compound fractures, have been practically eliminated. The science of surgery has at last demonstrated to the world that it has fairly met these demons of destruction, and that it has conquered them. Without doubt, the means of warfare have been found in the establishment of bacteriological laboratories, for without these institutions the great discoveries that affect the happiness and mortality of the human race could not have been made. For my own part, I remained a sceptic to the germ theory of inflammation until the Carnegie Laboratory afforded me an opportunity to work out my own salvation. The reduction of the death-rate from 68 per cent., which half a century ago was considered a brilliant achievement, and a result which was thought worthy of publication, to that of a cipher, represents what surgery has done for the amelioration of human suffering and the preservation of life. Humanity, indeed, owes a debt of gratitude to the science of surgery, which has annihilated pain and suffering, and has preserved and prolonged human life. To Pasteur and to Lister the profession are indebted for this great work—the former as the discoverer of the means, and the latter as the one who applied the discovery to surgery. Surely their names can never be disassociated with the march and progress of the grandest profession in the world.

HOSPITAL NOTES.

OPERATION FOR INGUINAL HERNIA IN A CHILD. THIERSCH'S METHOD OF SKIN-GRAFTING. STRICTURE OF THE URETHRA. FISTULA IN ANO. REMOVAL OF A FLOATING CARTILAGE FROM THE KNEE-JOINT.

Abstract of a Clinical Lecture delivered at the Roosevelt Hospital, New York.

By CHARLES McBURNEY, M.D.,
ATTENDING SURGEON.

Case I.—The first patient presented to the class was a little boy, who, at the time of his admission to the hospital, was reduced almost to a skeleton. Urination had been constant and painful. He was found to be suffering from a calculus, which was removed by suprapubic cystotomy. All the bladder symptoms were removed by this operation; but there was in addition an inguinal hernia induced by the calculus in the bladder. This was operated upon a week previously, and the sac found filled with such a large mass of intestine that reduction was accomplished with difficulty. It is not an easy matter to secure proper antisepsis in children on account of their restlessness, so that Dr. McBurney had been in the habit of dressing such cases with a plaster-of-Paris double-spica bandage; with this heavy dressing the child can be kept lying immovably on one side, so that the stream of urine is directed away from the wound. This was the method adopted in the present instance, and the patient's temperature only once reached 101° F., having been most of the time below 100° F. There have been no symptoms that would lead one to suppose that the wound had become infected. On removing the dressing, there was found some swelling of the testis, but the wound itself was in excellent condition with the exception of a drop or two of pus in the scrotal incision. The operator said that personally he had no objection to operating upon such young children, and that he had done so in a number of cases without the development of any unpleasant symptoms. The plaster-of-Paris bandage is no longer needed, and the subsequent dressings—consisting of powdered iodoform, iodoform gauze, rubber tissue, and a roller bandage—will be changed on alternate days. The little patient's general condition is remarkably improved.

Case II.—The next patient was a man who had received a slight injury to the knee, which was followed by a suppurative inflammation of the bursa, and extensive burrowing of pus. The suppurating sac had been opened and treated in the usual way, yet during two months of careful treatment, there had been no real attempt at repair, and large chronic ulcers remained. A week ago, he had been subjected to the operation of skin-grafting by Thiersch's method, which Dr. McBurney has frequently used, and considers much the best method. The grafts were obtained by shaving off with a very sharp razor, large thin sections of healthy skin from the thigh. The surfaces of the ulcers were excised, and, after controlling the hæmorrhage, the grafts were applied. They were covered with India-rubber tissue, and the dressings kept moist with salt solution. The surface from which the grafts were taken was simply dusted with iodoform and firmly bandaged. On removing the dressings, it was found that a small ulcer on the lower part of the leg presented only one minute point of granulation; a second ulcer in the middle of the leg, about three inches in diameter, which had been covered by two grafts, had cicatrized, and the same result had been attained in a still larger ulcer in front of the knee. On the latter ulcer were one or two dark points, showing where hæmorrhage occurred soon after the application of the grafts. These will probably slough. The most remarkable feature of this method is the rapid elevation of the surface after the application of the grafts. Those who saw the operation, recalled the fact that the ulcers had sharply cut edges, and seemed to be about one-sixth of an inch in depth, whereas they were now level with the surrounding surface. There is an entire absence

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of any tendency to cicatricial contraction, and the tissue will remain as it is with the exception of a little thickening. By this simple operation, one week has sufficed nearly to heal the ulcers, whereas two months of previous treatment had accomplished nothing. In all probability the patient will be up and around in another week.

CASE III.—Dr. McBurney called attention to a complicated case of urethral stricture, which required very extensive cutting. He divided every stricture so that a No. 32 sound readily passed into the bladder. To guard against infection of the deeper part of the canal, he introduced, as was his custom, a drainage tube through the perineum into the bladder. The tube is usually removed in three or four days, but is at once re-inserted if there are fever, chill, or other symptoms indicating infection.

CASE IV.—A case of fistula in ano was then freely incised, the redundant skin removed, and the surface lightly touched with the Paquelin cautery. Dr. McBurney frequently makes use of the cautery in this way, and he thinks that more rapid granulation follows than can be obtained by any other method. For the first week after the operation, the wound is packed with iodoform gauze; but after this, the progress will be more rapid if balsam of Peru be substituted for the iodoform.

CASE V.—The next case was that of a man, twenty-four years of age, who presented an unusual history in that, up to about two months ago, he was not conscious of any difficulty with the knee. Even at this time, there was no marked interference with the functions of the joint, and it was only three weeks ago that he felt under the skin a small movable body. Since then, there have been occasional pain and interference with complete extension of the joint, and also a serous effusion into the joint. It looked like an ordinary case of mild serous synovitis, but further examination revealed the presence of a floating cartilage, being, in all probability, a portion of redundant synovial membrane separated from its attachment, in which a gradual deposit of calcareous material had taken place. A few months ago Dr. McBurney operated upon a case in which the cartilage was found in the process of formation and still attached. In some portions it was harder than in others, owing to the deposit of calcareous material which was taking place. A little later the cartilage would have been set free, and have given rise to further symptoms. It is remarkable that in the present case the cartilage should be free and yet give the patient so little trouble. The risk of removing such bodies under proper precautions is very slight; and if left alone, the joint will unquestionably suffer from their presence, rendering the patient predisposed to a chronic synovitis, and he may at any time be thrown down by the cartilage slipping in between the joint surfaces.

On the previous day the cartilage was found in the extreme lower and outer part of the synovial pouch, and now it is upon the inner side; but the presence of the fluid made the exact location difficult to determine.

After spending some time in ineffectual attempts at locating the body by palpation, an incision about one and one-half inches long and parallel to the axis of the limb, was made on the outer side of the knee, extending down to the synovial membrane, which was then opened. The body was very smooth and slipped from the grasp several times, but was finally removed from the lower part of the joint and found to be nearly circular, and measuring about three-quarters of an inch in diameter.

Dr. McBurney was of the opinion that the introduction into the joint of any foreign material, even an antiseptic fluid, was injudicious; therefore the cavity was not irrigated, but the wound in the synovial membrane was brought together with four sutures. The capsule was similarly treated, and the superficial tissues were united by a continuous catgut suture. A small rubber drainage-tube was introduced through the skin only. The external parts were then irrigated with corrosive sublimate solution (1 : 2500), the usual antiseptic dressing applied, and the limb bandaged from the toes upward. Immobilization was secured by two lateral wire splints, left in position for about two weeks.

Dr. McBurney said that he usually found it impossible from an examination of the specimen after its removal to determine its origin; but he thought it was only in very rare instances caused by a fracture. In the present case there was no history of traumatism, nor had there been in any case which he had seen.

MEDICAL PROGRESS.

The Uses of Ichthyol.—PROFESSOR NILS GADDE reports his results with the internal and external use of ichthyol in a number of different diseases (*Therapeutische Monatshefte*, March, 1890). With urticaria, both acute and chronic, the internal administration was of decided benefit. He has treated a number of cases of chronic alcoholism by the same means with success, tremor quite rapidly disappearing, appetite returning, and sleep becoming normal and undisturbed. In one case marked tremor disappeared in ten days. The depression and anxiety of chronic gastric catarrh were also much diminished by the drug.

In chronic rheumatism, either articular or muscular, the external and internal employment of ichthyol was followed by good results. The pain of arthritis deformans was also considerably diminished.

The author has administered the drug in cases of chronic nephritis and diabetes, but considers his observations too few to permit positive deductions. In one case of diabetes the sugar was reduced from six per cent. to one-half per cent. in about one month, but in connection with the administration of ichthyol the diet was regulated. The doses in which the drug was administered are not stated.

DR. FREUND, of Strassburg, employs ichthyol in the treatment of many diseases of the genito-urinary organs in women (*Berliner klinische Wochenschrift*, March 17, 1890), and advocates its use in chronic parametritis, chronic and subacute perimetritis with exudations or adhesions, inflammation of the ovaries and tubes, erosions of the cervix, and pruritus of the external genitals, in all of which diseases it has given the author suprisingly good results. He administers the drug internally in doses of 1½ grains three times daily at the beginning of treatment; later, this dose is doubled. For intra-vaginal use a mixture of ichthyol (sulph-ichthyolate of ammonium) 5 parts, glycerin 100 parts, is employed by saturating cotton tampons, which are introduced into

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the vagina. In addition to this an ichthyol ointment (equal parts of ichthyol and lanolin) or soap (ichthyol 1 part, green soap 10 parts) may be rubbed into the abdominal walls with the view of hastening absorption, or the drug may also be used in enemata of olive oil or in suppositories.

Cervical erosions the author usually treats by painting with the pure ichthyol. For pruritus it may be used in the form of an ointment or a ten per cent. solution in water.

In all cases, according to Freund, the internal administration is followed by improvement in the general condition, the appetite increasing and the stools becoming more regular. In no case were disagreeable symptoms of any kind produced.

Treatment of Exophthalmic Goitre.—Professor Nothnagel states that digitalis and drugs with similar effects are entirely useless in Graves's disease. An effective agent against the palpitation is cold, in the form of an ice-bag applied either over the cardiac region or over the neck. The patients should live quietly, and avoid coffee, beer, tobacco, and mental and bodily excitement. Little or nothing is to be expected from medicinal remedies. According to the most recent observations, galvanism through the medulla oblongata and cervical sympathetic is the best treatment; but this treatment must be regular and long continued, and should be associated with a hydro-therapeutic course—the patient being systematically treated with tepid half-baths, irrigations, wrapping in moist linen cloths, and the cold spinal bag. By these means an improvement in the condition is in many cases brought about. Iron may be given if indicated; in other cases, when patients are much excited, bromide of sodium or potassium may be exhibited in doses of fifteen grains twice or thrice daily. An important means of treatment, but one that can only be carried out in the case of well-to-do patients, is to send them to mountain regions, especially to the higher altitudes.—*Practitioner*, March, 1890.

Orexin.—According to the *Therapeutische Monatshefte*, orexin hydrochlorate, the new stomachic, is quite soluble in warm water, is very irritating to the nasal mucous membrane, and when applied to the tongue has a bitter taste and causes a burning sensation.

Professor Penzoldt prescribes it in the form of pills, as follows:

℞.—Orexin hydrochlorate . . . 20 grains.
Extract of gentian } of each
Pulverized althæa } sufficient quantity.

Mix and divide into 20 pills, which should be gelatin-coated. Three to five pills may be taken once or twice daily, with a cup of broth.—*Medical Chronicle*, March, 1890.

The After-effects of Chloroform.—A new phase of the chloroform question is touched upon in a paper by Ostertag, published in the *Deutsche medizinal Zeitung*, January 16, 1890. In the literature of the fatal cases of the administration of chloroform as an anæsthetic a few are on record where death was only produced a number of hours after the production of the narcosis. Thus Langenbeck published, in 1850, a case of death after extirpation of the shoulder, which occurred seventeen hours after the operation. Berend also published cases in which death did not occur until sixty hours after the production of narcosis. Ungar and Strassmann called attention to the fact that chloroform inhalation in certain instances had produced fatty degeneration of internal organs, especially of the heart and liver, but without producing any detectable alteration in the blood. These results seem to have attracted but little notice, though it is evident that they should draw attention to a possible phase of chloroform death which is worthy of a careful study.

The author's experiments were made on rabbits, guinea-pigs, rats, cats, dogs, and pigeons, in all of which the prolonged administration of chloroform was followed by fatty degeneration of the heart and other organs, and by changes in the blood. He claims that it is quite conceivable that the preliminary stages of fatty degeneration, even although not having passed to a complete degeneration, may be concerned in the reduction of the functional activity of the heart. Fatty degeneration of the skeletal muscles, which was especially noted in the diaphragm, may likewise prove an important factor in the disturbance of respiration; while, of course, the depressing action on the respiratory centre is likewise of prime importance. Further than this, the interference with the respiration leads to the accumulation of carbon dioxide in the blood, and this may act as a depressant on the heart muscle.

The author formulates his conclusions as follows: 1. After prolonged inhalation of chloroform, fatty degeneration of different organs, especially of the heart, liver, skeletal muscles, kidneys, and stomach occurs in animals of widely different species. 2. The fatty degeneration is the result not only of the action on the blood and the structure of the red blood-corpuscles, but also of a direct local action on the tissue cells themselves. 3. Certain individuals show such great susceptibility to the action of chloroform by inhalation that they rapidly succumb to its influence. 4. The fatal after-effect of chloroform is attributable to paralysis of the heart, due to an anatomical degeneration of the myocardium, although in certain cases this may only with difficulty be detected, and to a gradual accumulation of carbon dioxide in the blood.—*Therapeutic Gazette*, March 15, 1890.

Prescription for Chilblains.—According to the *Monatshefte f. praktische Dermatologie* of March 15, 1890, Dr. Baelz uses the following as an application to chilblains and chapped hands:

℞.—Liquor potassa . . . ½ part.
Glycerin } of each . . . 20 parts.
Alcohol }
Water . . . . . 60 " —M.

To be used once daily after washing the hands in warm water. If desired, the mixture may be made more agreeable by the addition of a perfume.

Some Therapeutic Uses of Cannabis Indica.—In a short paper (*Lancet*, March 22, 1890) Dr. J. Russell Reynolds describes the conditions in which he has found cannabis Indica useful. In senile insomnia, where an

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elderly person, probably with brain-softening, goes to bed, gets up again, thinks he has an appointment to keep, etc., and yet is quite rational during the day, Reynolds considers cannabis indica the most satisfactory of all drugs, and gives from one-fourth to one-third of a grain of the extract at bedtime. In such cases it has been useful for months, or even years, without increasing the dose. In melancholia it is of less service; in alcoholic delirium and in mania it is valueless. Neuralgia, even after it has existed for years, he has often seen relieved by the drug. In neuritis it is very valuable, but only as an adjunct to mercury, iodine, or other remedies. Many victims of migraine have kept the attacks in abeyance for years, by taking hemp when an attack threatens. In sciatica, and in myalgia wherever situated, it has proved of no value. The same may be said of its use in gastrodynia, enteralgia, tinnitus aurium, and the so-called hysterical pains. On the other hand, it has relieved the lightning pains of tabes, and the disorders of sensation so frequently found in gouty subjects.

In many cases of clonic spasms, whether epileptiform or choreiform, such as are seen from a variety of causes in children, Reynolds has successfully relied upon hemp alone; but in true epilepsy an extensive experience has shown him that it is absolutely useless. The author believes that there are many cases of so-called epilepsy in adults which are either eclamptic or due to gross lesions in the nerve centres, and in these Indian hemp is a most useful agent. In tonic spasm, such as torticollis, in writer's cramp, general chorea, paralysis agitans, the ataxic movements of spinal sclerosis, and in tetanus the remedy is of no benefit. It relieves some cases of spasmodic asthma, and is of great service in cases of simple spasmodic dysmenorrhœa.

Reynolds explains the toxic effects occasionally observed by the fact that the drug varies greatly in strength, and that there are individuals peculiarly susceptible to its action, as is observed with other agents. As a commencing dose for an adult he never exceeds one-fifth of a grain; or for a child, one-tenth of a grain. But by gradually increasing the dose, adults may take with impunity, and often with advantage, two, three, or even four grains at a dose.

The Danger of Iodides in Acute Nephritis.—PROFESSOR PRIMAVERA (*L'Abeille Médicale*) declares that it is dangerous to prescribe the iodide of potassium or sodium in acute nephritis. In support of this opinion, he cites the following, one of many similar cases he has seen:

A boy, fourteen years old, developed acute nephritis fifteen days after an attack of scarlatina. The urine was scanty and albuminous, and contained large quantities of hæmoglobin and numerous casts. A milk diet was prescribed, but no drugs. Some days later, after the albumin had greatly diminished, another physician prescribed iodide of sodium, which was immediately followed by an increase of the albumin and casts and the appearance of blood. The iodide was stopped and the albumin and blood rapidly diminished. On giving the iodide a second time the same symptoms were produced, and again disappeared when the drug was withdrawn.

Primavera is convinced that the iodides are dangerous in acute nephritis. They may be used in syphilitic nephritis, but even here must be carefully watched.

The Treatment of Gleet.—PROFESSOR FESSENDEN W. OTIS (*Physician and Surgeon*, March, 1890) writes as follows upon the treatment of gleet:

As large a sound as can be used without undue force having been passed, either Ultzmann's short silver catheter with slit openings, or an ordinary silk catheter *coudé* is introduced just beyond the compressor urethræ muscle so that the eye lies in the neck of the bladder, and as much fluid as can be comfortably borne by the patient (usually from eight to ten ounces) is injected into the bladder by means of a large hand syringe. The patient then empties the bladder in the natural manner, the catheter having been withdrawn, thus thoroughly washing the urethra from behind forward. That the catheter is in the correct position is known by the fact that, when the injection is made, the fluid does not flow outward along the sides of the catheter, as it would were it not prevented by the action of the compressor urethræ; nor, when the syringe is removed, does the fluid flow out through the catheter as it would if it were in the bladder—this being prevented by the sphincter internus. The internal sphincter is so weak, however, that it makes but little resistance to the entrance of the fluid into the bladder. The first injections are extremely weak, increasing in strength day by day as the dilatation progresses. On the first day after the passage of the sound (lubricated with glycerin), a solution, consisting of zinc sulphate, carbolic acid, and alum, of each 1 part, water 2000 parts, is injected. On the second day, the strength of this is increased by reducing the water to 1500 parts, on the third day to 1000 parts, and, on the fourth day, to 500 parts. On the fifth day a change is made to a solution of the permanganate of potassium, 1 to 2000 of water; on the sixth day, 1 to 1500; on the seventh, 1 to 1000, when the solution is changed to the nitrate of silver, 1 to 1000, which is gradually increased in strength to 1 to 100. If the discharge still continues after the silver solutions have been used, they should be supplemented every three or four days by the injection of a few drops of a 5 per cent. solution of silver nitrate into the deep urethra by means of the drop-syringe. After a time it will be found that the large injections, if they have not cured the discharge, will cease to act beneficially and become irritating; they should then be stopped and the applications with the drop catheter alone relied upon, the dilatation being continued.

Laryngeal Tuberculosis as a Cause of Globus Hystericus.—LANGREUTER (*Centralblatt für Nervenheilkunde*) reports the case of a laboring woman, forty-four years of age, who was admitted to hospital with the typical symptoms of hysteria, functional paresis of lower extremities, paræsthesia, sensation of fulness in head, etc. The patient repeatedly said that there was a foreign body in the throat, made efforts to expel it, and signified that it should be removed. Her manner was so hysterical that organic disease was not suspected, but on the fourteenth day after admission she died. At the autopsy extensive tubercular deposits were found in the larynx, though the lungs and other organs were normal.

Langreuter thinks that such cases should always be borne in mind in making a diagnosis when there are hysterical laryngeal symptoms.—*Centralblatt für klinische Medicin*, March 22, 1890.

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SATURDAY, APRIL 19, 1890.

RETENTION OF URINE.

THE profound pathological effect of retention upon the urinary organs is so well formulated from a clinical standpoint, and the *rationale* of the process thus originated has been so carefully elaborated, that further investigation upon this subject, even from the point of view of the experimental therapeutist, would apparently give little promise of fruitful result. Yet GUYON (*Annal des Mal. des Org. Génito-urin.*, March, 1890) has by a series of experiments so controlled the observations of the clinicians that he has materially added to an exact knowledge concerning the secondary effects of obstruction to the outward flow of the urine from the bladder.

Though it is not always stated in surgical textbooks, still it has long been observed that retention of urine, no matter what its cause may be or the length of time it has continued, is not accompanied by fever unless a septic element is introduced. When the urine contains no microörganisms, as determined by culture-experiments there is no elevation of temperature. These observations were confirmed by observing animals, the urethræ of which had been ligated. Hyperpyrexia was observed only in those animals whose bladders had been infected before ligation.

All cases of retention, both complete and incomplete, are characterized by polyuria, though this is especially marked where the condition is partial and chronic. Experiments fully verify this observation. Congestion of the entire urinary apparatus is another consequence of retention; if this be acute and prolonged, a brown or even red coloration of the urine, from admixture with blood, is not rare. As a result of this congestion, if, in chronic retention accompanied by cystic distention the bladder be completely and rapidly evacuated of its contents, a hæmaturia nearly always results. In acute retention the prostate and kidneys have both been observed to diminish in size when the bladder was emptied, and many cases of hæmaturia have been immediately cured of this complication by simply drawing off the retained urine. In animals Guyon has observed this congestion, involving not only the kidneys and the prostate gland, but also the renal pelves, the ureters, and the bladder. In the bladder and kidneys there is not only blood-stasis but interstitial hæmorrhages are found. As a result of this the bladder epithelium is detached in places, thus exposing areas fitted for rapid absorption; the gorged vessels form a conspicuous scarlet network, ecchymotic plaques are distributed irregularly over the inner aspect of the organ, and the urine contains blood. The kidneys are a sixth larger than normal, the extravasated blood percolates between the tubes and penetrates into their interior, causing a mechanical destruction of their epithelium, and hence the appearance in the urine of blood and epithelial tube-casts. In chronic retention of long duration dilatation of the canaliculi is observed, with flattening and granular degeneration of the epithelium.

The polyuria accompanying and dependent upon retention is not excited by the distention of the bladder; since, if this organ is subject to excessive tension there is a lessening of urinary secretion with diminution of urea, especially in that part of the water taken from the ureters, provided the flow of urine is not obstructed. In the normal condition of the parts the constant flow of the urine through the ureters provides a protective irrigation against septic inoculation of the kidneys, even though the bladder be infected. In retention, if prolonged, this flow is first diminished, then entirely suppressed. The chemical difference in composition between the urine of the bladder and that of the ureters, together with the fact that in the vesical hæmaturia of prolonged retention the water of the ureters is free from blood, shows that the bladder urine does

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not pass backward into the ureters. Nevertheless minute particles of inert substances, such as charcoal, can ascend to the pelvis of the kidney when a continued flow from the ureters is interrupted, though these inert particles pass upward very slowly and do not penetrate beyond the renal pelvis. Microörganisms, however, reach the kidney quickly, and penetrate to all parts of the organ. The urinary stasis is complete in proportion to the amount of distention-atony from which the bladder and ureter suffer. The bladder loses its muscular power somewhat earlier than the ureter. If the retention has lasted not longer than twenty-four hours, the ureteral contractility may be restored by the evacuation of a portion of the bladder contents or by electrization, to be followed shortly by returning power of the cystic muscles. A more prolonged dilatation produces atony which cannot be remedied. The practical deductions from these experimental confirmations of clinical fact are: the importance of promptly relieving an over-full bladder, and the extreme care necessary as to the asepsis of all instruments used for the relief of either acute or chronic retention.

TARIFF ON BOOKS.

IT is with great pleasure that we notice that books and pamphlets printed in languages other than English are placed upon the free list in the new Tariff Bill, and we sincerely trust that many of our subscribers will be sufficiently interested in the matter to write to Chairman McKinley commending his action in this matter, and also to their representatives and senators urging that the clause making these books free shall be permitted to become a law. At the present time, owing to the craze for taxing not only proper substances but those things which by their free importation would improve the mental condition of the population of the United States, medical men are unable to receive even a pamphlet in the German or French language without having to pay a small, but nevertheless annoying, custom fee. These amounts are so small that even in the aggregate they can be of but little advantage to the Government; while, on the other hand, to an individual whose funds are limited the constant addition of 25 or 40 cents, or perhaps a dollar, to the value of a European work readily prevents a general purchase of the standard medical publications of firms upon the Continent. It does not protect American industries, because no American publisher would ever think of reprinting a book in a foreign tongue, and even if he prints a translation the purchaser of the German copy would probably be glad enough to buy the English version. Fortunately, there is little doubt that the clause we mention will pass the "House," and that these books will be given a free entry, not because the national legislators take enough interest in such matters to push the law through, but rather because they do not care to deal with what to them seems so small and unimportant a matter.

REVIEWS.

A GERMAN-ENGLISH DICTIONARY OF MEDICAL TERMS. By FREDERICK TREVES, F.R.C.S. Eng., and HUGO LANG, B.A. 12mo., pp. 402. Philadelphia: P. Blakiston, Son & Co., 1890.

For years English and American students have keenly felt the need of a complete German-English medical dictionary. Cutter's dictionary, good ten years ago, is now extremely unsatisfactory. Billings's "National Medical Dictionary" is beyond the reach of many a purse. Adler and Grieb are very imperfect in medical terms and definitions. For these reasons, we have examined the work before us with great interest. After careful comparisons with the above-mentioned lexicons, and, after using it constantly for a brief period, we feel fully justified in saying that it is surprisingly satisfactory and complete.

The care and thoroughness with which it has been prepared, is shown by the fact, as stated in the preface, that over one hundred and fifty German volumes were perused from beginning to end, and all medical words extracted and provided with an English equivalent—a labor covering a period of five years. The authors estimate that the work contains about 16,000 words which are not to be found in any German-English dictionary. Much space has been saved by omitting words the definition of which is obvious, such as *patellarreflex*, *nephrektomie*, etc., and by the judicious separation of compound words.

We most heartily commend the volume to all students of German medicine, and doubt not that in a very short time it will be on the table of every one.

PRINCIPLES AND PRACTICE OF SURGERY, BEING A TREATISE ON SURGICAL DISEASES AND INJURIES. By D. HAYES AGNEW, M.D., LL.D. Profusely illustrated. Second edition, thoroughly revised and with additions. Three volumes. Philadelphia: J. B. Lippincott Company, 1889.

To attempt to give anything more than a book notice of the second edition of a Surgery which is one of the monuments of American medicine would be absurd, unless many pages of this journal were devoted to the consideration and criticisms of the statements made by its distinguished author. It is but a few years since the first edition was completed in its third volume and placed before the profession, and we are glad to find that the

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teachings of Dr. Agnew have not only been gladly received by the students whom he has taught, but by his professional brethren all over the world. In the present edition, conservative notice is taken of the rapid advances which have been made in the practice of surgery since the first edition appeared, and while several things have been omitted which we think should have found a place, we cannot but recognize that the book before us is intended as a trustworthy and absolutely reliable guide to the surgeon or physician wherever he may be in practice, and that it is not designed to bring before him the latest fad or untried operation.

The important subject of antisepsis, which was, comparatively speaking, in its infancy at the time that the first edition appeared, has of course received proper attention; but we feel sure there can be little doubt that the statistics, which are given in various portions of the work would be very considerably modified if they were divided into parts in which cases were treated with and without antiseptic precautions. These are the most notable changes which have been made by the author, and we feel confident that with them the work will go on to a still more successful career, and Dr. Agnew may rest assured that he has placed a stamp upon the history of American medicine which many years cannot efface.

CORRESPONDENCE.

NEW YORK.

To the Editor of THE MEDICAL NEWS.

SIR: The increasing interest that is shown in all matters pertaining to preventive medicine, both by the medical profession and by our civil authorities, is full of good omen; and the efforts now being put forth in this direction must surely bear good fruit in the near future. Our Health Board has been remarkably active in the enforcement of the law regulating vaccination. The law is not a new one, but for a number of years its provisions have been carried out in such an indifferent manner that many of our citizens are greatly surprised at what they are pleased to style "the new rule made in the schools." But even now there is no attempt made to determine whether the school-children are properly *protected* by vaccination, the fact of their being vaccinated at some time, no matter how remote, being accepted as a compliance with the requirements of the law. I do not mean to speak disparagingly of the Board of Health, for it has arisen from its former condition of "innocuous desuetude," and seems to be honestly striving to secure that hearty coöperation of the medical profession which is necessary to carry out properly its important and legitimate work. Attention has already been called to the fact that our people are almost panic-stricken when they hear of the possibility of typhus fever, smallpox, or cholera getting a foothold here; but they look with an apathy born of long familiarity with its horrors, and a mistaken notion of its nature, upon the constant ravages of diphtheria. This disease yearly counts among its victims more than many an epidemic of cholera. Great praise is due our health authorities, who have undertaken the difficult task of staying the march of this dread enemy. They have issued an order to the dispensaries requiring persons who come to these places, and are found to be suffering from diphtheria, to be detained and quarantined until the Board of Health can remove them to the hospital. It will be no easy matter to make the people believe that this is a beneficent measure, and that a due regard for the safety of all, demands that it shall be rigidly enforced. To those who have seen a tenement-house "wake," there is no mystery about the spread of contagious diseases; and the difficulties in the way of enforcing the law requiring private funerals in such cases can be easily imagined. The health inspectors have met with violent opposition in endeavoring to perform this duty; and he would, indeed, be rash who would venture, single-handed and unprotected, upon such a mission. Some of your readers may remember the experience of a poor man who, in his anxiety to avoid carrying diphtheria to his own home, dared to refuse "to kiss the corpse." He was seized by the excited people at the "wake," and but for timely aid would have been thrown out of a window.

The Pædiatric Section of the Academy of Medicine has devoted part of an evening to the discussion of the prophylaxis of diphtheria, with reference to the physician as a means of carrying contagion, and to the means to be employed for the better protection of nurses and others exposed to the disease.

Dr. W. P. Northrup thought that in addition to the usual precautions to secure cleanliness and disinfection of the person of the physician, he should remove his coat before entering the sick-chamber and wrap himself in a sheet. Dr. A. Caillé believed most thoroughly in the efficacy of systematic and thorough irrigation and disinfection of the oral and nasal cavities, not only of the patients but of those exposed to the disease. Dr. W. H. Thomson felt sure that the physician was rarely the carrier of contagion, and he asked in vain for the members of the Section to produce any well-authenticated case. While it is probable that the disease is not very frequently carried from one patient to another in this manner, those who have seen physicians visit such cases and then continue on their way without even taking the precaution to wash their hands, naturally ask themselves, By what good fortune do these physicians and their patients escape?

A great change has come over the opinions of medical men on the subject of heart disease. The student of a few years ago was confused by descriptions of various murmurs, their supposed origin, and their significance; and he often emerged from this labyrinth with the general notion that a murmur and heart disease were almost synonymous, and that the treatment could be summed up in the words "rest and digitalis." It was therefore gratifying, in a discussion at the Academy of Medicine on the therapeutics of heart disease, to see that a much more comprehensive view was taken of the subject, and that, as the President, Dr. Loomis, aptly remarked, "We have left the discussion of valvular diseases, and have grouped them according to the condition of the heart muscle, regarding that as the great factor in our study and treatment."

The discussion was directed more particularly to the consideration of the mechanical and dietetic treatment of heart disease.

Dr. H. N. Heineman said that the mechanical treatment, although not original with Oertel, had been placed by him upon a sound scientific basis. The proper ex-

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ercise of a muscle led to its hypertrophy; and even muscular fibres which had undergone partial fatty degeneration, would improve and some of its fibres might ultimately hypertrophy, and by their proliferation overcome the degeneration which had taken place.

Dr. W. H. Thomson thought that we should not lose sight of the vital importance of oxygen to a muscle. Throughout the whole animal kingdom muscular power was found to be dependent upon the activity of respiration. This was particularly noticeable in the insect tribe, where the muscular power was phenomenally greater than that of any other class of living creatures. The muscle cell, unlike the nerve cell, used oxygen as its chief stimulant, and almost as its food. We had learned that animal heat came from the muscular tissue, independently of its contraction; and experiments had shown that the blood coming from a muscle by its vein, was more venous than the blood in the right side of the heart, and that more carbonic acid was generated by muscle than by any other tissue, which was another proof that the muscles used a great deal more oxygen. From these facts it followed that in the presence of muscular degeneration, a free supply of oxygen was urgently indicated, and this could best be obtained by giving iron, and securing for the patient an out-door life. He did not recommend muscular exercise *per se*. There was nothing better for these patients than camping out; and it was worthy of remark that the nomad races suffered the least from heart disease. Oxygen dilated the capillaries, and lowered arterial tension; and by eliminating the nitrogenous element as far as possible from the diet, the kidneys were relieved of much work and the vascular tension still further diminished. Therefore, in fatty degeneration of the heart, fresh air and a liberal diet of fermented milk were the most important elements in its successful treatment. There was a practical unanimity throughout the discussion as to the importance of diet and exercise in the treatment of heart disease, and drugs were relegated to a very subordinate position.

The usual routine of medical meetings was somewhat broken at a recent meeting of the New York County Medical Society, as it was found necessary to prefer charges against two of the members who had been guilty of flagrant violations of the code of ethics. The censors received information from the Medical Society of the County of Erie that one of these offenders was engaged in extensively advertising a patent medicine business. The evidence proved to be satisfactory, and he was expelled by a unanimous vote. The other member had not only been guilty of repeatedly advertising himself in the daily papers as a specialist, but conclusive evidence was furnished of his practising under an assumed name. After hearing the charges in detail, the Society unhesitatingly and unanimously voted to expel him.

On the evening of February 27th, the Alumni of the University of the City of New York held their annual dinner at Delmonico's, and the attendance was unusually large.

Dr. C. B. Kelsey, as is well known, was at one time a strong advocate of the treatment of hæmorrhoids by the injection of carbolic acid, but he has experienced a most decided change of faith on this point. At a meeting of the Society of the Alumni of Bellevue Hospital, he said that it had been the cause, on more than one occasion, of his eating "humble pie." When his article on the treatment of two hundred consecutive cases by this method without a mishap was still in press, he met with his first unfortunate case. The operation, he said, was sometimes followed by an unusually large slough, or by a periproctitis, or an ischio-rectal abscess. Whenever an irritating fluid was injected into a vascular tumor, one was unable to limit its irritant action, and bad results might follow either a weak or a strong solution. He had seen profuse and dangerous hæmorrhage follow the injection of a ten per cent. solution of carbolic acid into a hæmorrhoid, owing to the slough opening into a vein. But the most serious objection to the employment of this method was that the results were not permanent, and, after a period of two or three years, the hæmorrhoids were pretty sure to return. The method should be unequivocally condemned. He considered the operation, *par excellence*, for the relief of hæmorrhoids, was the clamp and cautery operation recommended by Mr. Smith, of London.

LONDON.

The Gulstonian Lectures. The New University of London Scheme. The Royal Medical and Chirurgical Society.

To the Editor of THE MEDICAL NEWS,

SIR: The annual Gulstonian lectures fell this year to the lot of Dr. G. N. Pitt, of Guy's Hospital, who took cerebral lesions for his subject and devoted his first lecture to the consideration of a series of fatal cases of ear disease. The records of his hospital during the last twenty years furnished him with fifty-seven cases, thirty-four being males, and two-thirds of the entire number were under twenty years of age. The two chief causes of death were abscess of the brain and thrombosis of the lateral sinus with subsequent pyæmia. Of cerebral abscess, there were eighteen cases, equally divided between the two sides of the brain. He found that abscesses in the temporo-sphenoidal lobe, which was by far the most common situation, were often associated with an inflamed or sloughing dura over the anterior surface of the petrous bone, or with a collection of pus beneath it; other complications were infrequent except meningitis, which was generally due to the extension or rupture of the abscess. The abscesses were almost always situated very close to the roof of the tympanum. A foul discharge was often a source of danger, and frequently, if not invariably, the spread of the mischief was due to imperfect drainage of the middle ear. Mastoid suppuration often involved the posterior surface of the petrous bone, but might be associated with disease limited to the middle fossa of the skull. His conclusions in regard to other points were, that cerebral abscesses occurred only when the otorrhœa had lasted for years or months; that the symptoms usually came on insidiously; that rigors, pyrexia, and optic neuritis were infrequent in uncomplicated cases, but that they all occurred occasionally; that a headache of intense severity and a dull, sluggish mental state were the two most characteristic symptoms; and that cerebellar abscesses were less common and were probably associated with disease of the dura mater behind the petrous bone, or with thrombosis of the sinus. Of thrombosis

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of the lateral sinus, he had had twenty-two cases; in some, but not all of these, there was well-marked phlebitis; in considerably more than one-half the thrombus was suppurating, but pyæmia existed in several cases in which no suppuration had taken place in the thrombus. His conclusions were as follows: 1. The disease more often spreads from the posterior wall of the middle ear than from the mastoid cells. 2. The otorrhœa is generally, but not always, of long standing. 3. The onset is sudden, the chief symptoms being pyrexia, rigors, pain in the occipital region and in the neck, associated with a septicæmic condition. 4. Well-marked optic neuritis may be present. 5. The appearance of acute local pulmonary mischief, or of distant suppuration, is almost conclusive of thrombosis. 6. The average duration is about three weeks, and death is generally due to pulmonary pyæmic abscesses.

The following very interesting and remarkable case of recovery after thrombosis of the lateral sinus was narrated: A boy, ten years of age, who had had otorrhœa for years, was admitted with a temperature of 102° F., earache, tenderness, and œdema; a week later he had a rigor and developed optic neuritis on the right side. The mastoid was explored without result. The rigors and pyrexia continued, and two days later the lateral sinus was explored, a mass of foul clot was removed from it and the jugular vein tied, the boy making an uninterrupted and permanent recovery.

With the exception of the University of London scheme, there is nothing much of interest going on in the medico-political world, nor, as far as I can make out, is any very great progress being made toward providing a reasonably accessible degree for London medical students. The scheme which the Senate put forth has met with almost universal condemnation, particularly in several important particulars, and it seems quite possible that the difficulties of reconciling the conflicting and opposing interests of the various bodies concerned will be found to be insuperable. The subject is engaging the attention of a committee of the College of Physicians and Surgeons, and it may be hoped that before long the result of their deliberations will be made public, but when all the teaching and licensing bodies have succeeded in agreeing there will still remain the formidable opposition of the Scotch and other universities, who are so largely benefited by the inaccessibility of the existing London degree.

The Royal Medical and Chirurgical Society has at last settled down in its new home in Hanover Square, and is indisputably in possession of most suitable premises. The alterations necessary to accommodate the very large library owned by the Society, and to provide a suitable debating room, have been completed, and the Fellows of the Society are once more able to use the library. The meeting-room, which has been built on what was formerly the garden, will hold two hundred people without inconvenience, and more, if necessary, though it is hardly likely that the number at any of our numerous medical society meetings will ever reach, much less exceed, that figure. The Clinical, Pathological, Obstetrical, and British Gynecological Societies will also be housed under the same roof, and perhaps some other scientific, but not professional, societies also.

THE EFFECT OF HEAT UPON THE RED CORPUSCLES.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue to-day it is stated, in an editorial upon "The Effect of Heat upon the Red Corpuscles," that the changes produced are very similar to the hæmatozöon malariæ. Doubtless they are to any one unfamiliar with that organism. The changes of which you speak are perfectly well recognized, and are seen every day by men who use Ehrlich's methods, or who watch continuously the behavior of corpuscles in the warm stage. Even without this apparatus the deformations, chain-like bodies, undulating flagella, etc., can be studied with an immersion glass on a blood-slide surrounded with paraffin and kept warm for twenty-four hours.

Only a tyro could confuse these with any known pathological alterations, and to speak of them as "singularly like" the remarkable series of forms characteristic of, and peculiar to, malaria indicates an absence of practical knowledge of the now well-known blood-changes in this disease. Very truly yours,

WILLIAM OSLER, M.D.

BALTIMORE, April 12, 1890.

THE INTERNATIONAL MEDICAL CONGRESS.

To the Editor of THE MEDICAL NEWS,

SIR: In a letter dated Berlin, Karlstrasse 19, March 22d, Dr. Lassar, the Secretary-General of the Tenth International Congress, directs me to inform the medical profession of America that a programme of the Congress and other communications will be distributed two months before the meeting amongst *those who will have registered previously and received their tickets of membership.*

The latter can be obtained by sending application and five dollars to Dr. Bartels, Leipzigerstrasse 75, Berlin, S. W. By so doing the members will save much crowding and time during the first days of the Congress.

For the American Committee of the Tenth International Medical Congress, A. JACOBI, M.D.

OBITUARY.

DR. HENRY HOLLINGSWORTH SMITH died on Friday, April 11th, of pneumonia, after ten days' illness. Dr. Smith was born in Philadelphia, December 10, 1815, and was the son of James S. Smith, a distinguished lawyer. He received his medical education in the University of Pennsylvania, from which he was graduated in 1837.

He was resident surgeon in the Pennsylvania Hospital for two years, and in 1839 visited the London, Paris, and Vienna hospitals, where he spent eighteen months in study. On his return he began practice, and gave instruction in surgery to private classes. In 1849 he became surgeon to St. Joseph's Hospital, soon afterward surgeon to the Episcopal Hospital, and in 1854 surgeon to the Philadelphia Hospital. Between 1855 and 1871 he was Professor of Surgery in the medical department of the University of Pennsylvania, and in the latter year became Professor Emeritus.

When the war of the Rebellion broke out he was made Surgeon-General of Pennsylvania, and organized the

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hospital department of this State. At the first battle of Winchester, Va., he originated the plan of removing the wounded to the large hospitals in Philadelphia and other cities, and established the custom of embalming the dead on the battle-field. He also organized and directed a corps of surgeons with steamers as floating hospitals at the siege of Yorktown, and served the wounded after the battles of Williamsburg, West Point, Fair Oaks, Cold Harbor, and Antietam. In 1862, after thoroughly organizing the department of which he was in charge, he resigned his commission, and had since been actively engaged in the practice of his profession. He was for three terms President of the County Medical Society, and at the International Medical Congress of 1887 he was Chairman of the Executive Committee.

Dr. Smith contributed largely to medical literature. Among his works were the following: *An Anatomical Atlas*, to illustrate William E. Horner's *Special Anatomy* (Philadelphia, 1843); *Minor Surgery* (1846); *System of Operative Surgery, with a Biographical Index to the Writings and Operations of American Surgeons for 234 Years* (2 vols., 1852); *The Treatment of Ununited Fractures by Means of Artificial Limbs* (1855); *Professional Visit to London and Paris* (1855); *Practice of Surgery* (2 vols., 1857-63), and numerous surgical articles in medical journals. He translated from the French *Civiale's Treatise on the Medical and Prophylactic Treatment of Stone and Gravel* (Philadelphia, 1841), and edited the *United States Dissector* (1844).

In October, 1843, he married Mary Edmunds, oldest daughter of Professor William E. Horner. A widow and three children survive him.

NEWS ITEMS.

Medical Examining Boards of Florida.—It is said that one of the medical examining boards of Florida recently rejected 35 per cent. of the applicants desirous of practising medicine in the State; a general average of 80 or more being required.

The Sims Monument.—It is stated that the committee in charge of the J. Marion Sims Fund have closed a contract with a German firm for a full-length bronze figure of the celebrated American gynecologist. The statue will be completed within a year, and, it is thought, will be placed in Central Park, New York.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 8 TO APRIL 14, 1890.

By direction of the Secretary of War, PAUL R. BROWN, *Captain and Assistant Surgeon*, now at the Army and Navy General Hospital, Hot Springs, Arkansas, is relieved from station at Fort Thomas, Arizona, and will report in person to the commanding officer Little Rock Barracks, Arkansas, for duty at that post, reporting by letter to the commanding general Department of the Missouri.—Par. 3, *S. O. 84, A. G. O.*, April 10, 1890.

By direction of the Secretary of War, leave of absence for two months, on surgeon's certificate of disability, is granted JOSEPH C. BAILY, *Lieutenant-Colonel and Assistant Medical Purveyor*, with authority for his admission to the Army and Navy General Hospital, Hot Springs, Arkansas, for treatment therein.—Par. 10, *S. O. 85, A. G. O.*, April 11, 1890.

By direction of the Secretary of War, the following changes of stations of officers of the Medical Department are ordered:

LAUDERDALE, JOHN V., *Major and Surgeon.*—From Fort Davis, Texas, to Fort Ontario, New York.

SKINNER, JOHN O., *Captain and Assistant Surgeon.*—From Fort Ontario, New York, to Fort Davis, Texas.

PERLEY, H. O., *Captain and Assistant Surgeon.*—From Fort Wayne, Michigan, to Fort Mason, California.

BURTON, H. G., *Captain and Assistant Surgeon.*—From David's Island, New York, to Vancouver Barracks, Washington Ty.

HOPKINS, WILLIAM E., *Captain and Assistant Surgeon.*—From Fort Mason, California, to Fort Columbus, New York Harbor.

STEPHENSON, WILLIAM, *Captain and Assistant Surgeon.*—From Fort Verde, Arizona Territory, to David's Island, New York.

WILLCOX, CHARLES, *First Lieutenant and Assistant Surgeon.*—From Fort Columbus, New York Harbor, to Fort Bowie, Arizona Territory.—Par. 2, *S. O. 83, A. G. O., Washington, D. C.*, April 9, 1890.

By direction of the Secretary of War, the leave of absence granted NATHAN S. JARVIS, *First Lieutenant and Assistant Surgeon*, in S. O. 34, March 20, 1890, Department of the Missouri, is extended fifteen days.—Par. 22, *S. O. 81, Headquarters of the Army, A. G. O.*, April 7, 1890.

By direction of the Secretary of War, MARSHALL W. WOOD, *Captain and Assistant Surgeon*, is relieved from duty at Fort Randall, South Dakota, and will report in person to the commanding officer Fort Meade, South Dakota, for duty at that post, reporting by letter to the commanding general Department of Dakota.—Par. 24, *S. O. 82, Headquarters of the Army, A. G. O., Washington*, April 8, 1890.

By direction of the Secretary of War, the leave of absence granted ROBERT M. O'REILLY, *Major and Surgeon*, in S. O. 24, October 16, 1889, amended by S. O. 252, October 29, 1889, both from this office, is extended one month.—Par. 30, *S. O. 81, A. G. O.*, April 7, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING APRIL 12, 1890.

WHITE, S. S., *Assistant Surgeon.*—Detached from the "Minnesota," and wait orders.

HARRIS, H. N. T., *Assistant Surgeon.*—Ordered to the "Minnesota."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FROM MARCH 24 TO APRIL 5, 1890.

BAILHACHE, P. H., *Surgeon.*—To represent Marine-Hospital Service at the meeting of the California State Board of Health, April 4, 1890.

WYMAN, WALTER, *Surgeon.*—To proceed to Wilmington, Delaware, on special duty, March 27, 1890.

CARRINGTON, P. M., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, on account of sickness, March 28, 1890.

PETTUS, W. J., *Passed Assistant Surgeon.*—Promoted, and commissioned Passed Assistant Surgeon by the President, February 26, 1890. Granted leave of absence for sixty days, with permission to go abroad, April 2, 1890.

HEATH, F. C., *Assistant Surgeon.*—To rejoin station, Detroit, when relieved at Cleveland, April 3, 1890.

KINYOUN, J. J., *Assistant Surgeon.*—To proceed to Wilmington, Delaware, on special duty, March 28, 1890.

STONER, J. B., *Assistant Surgeon.*—Relieved from special duty on floating-hospital "Stevens"; ordered to assume command of the Service at Pittsburg, Pa., March 28 and April 4, 1890.

CONDICT, A. W., *Assistant Surgeon*—To proceed to Cleveland, Ohio, for temporary duty, April 2, 1890.

GUITERAS, G. M., *Assistant Surgeon.*—When relieved at Pittsburg, Pa., to proceed to Marine Hospital, New York City, for duty, April 3, 1890.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVI. SATURDAY, APRIL 26, 1890. No. 17.

ORIGINAL LECTURES.

STRICTURE OF THE RECTUM; INTESTINAL OBSTRUCTION; INGUINAL COLOTOMY.

A Clinical Lecture delivered at the New York Post-Graduate Medical School Hospital.

BY CHARLES B. KELSEY, M.D.,
PROFESSOR OF DISEASES OF THE RECTUM.

GENTLEMEN: The case I shall show you to-day is one of great interest, being an example of the most serious form of disease of the rectum you will ever encounter except cancer. The disease is generally incurable and often fatal, but only after long suffering.

The patient is forty-two years old, married, and the mother of one child twenty-one years of age. She first came under my observation nine years ago, at which time she gave the following history: She had always suffered from obstinate constipation, and several years before had been relieved of an impaction by artificial means. The rectal symptoms began six years after marriage, or seven years before I saw her, and sixteen years ago.

Nine years ago she was in much the same condition as you now see her—emaciated, nervous, and nearly worn out with obstruction. There was at that time, as now, a constant discharge of foul-smelling pus from the anus, an entire loss of control by the sphincters, and great difficulty in securing a movement of the bowels, even by cathartics. There were then several fistulous openings around the anus, and one track in the recto-vaginal septum which communicated with both cavities.

At an inch and a half from the anus there was a stricture admitting the end of the index finger, and above and below this much ulceration. The stricture was not of very great extent, nor was it very unyielding; and, in fact, the mechanical obstruction was of less grave moment than the exhausting suppuration and incontinence.

Her condition to-day is much the same as then. There is still a stricture at the same point which will admit my index finger after slight pressure. Above the stricture as far as I can feel, the rectum is denuded of its mucous membrane and ulcerated. There is an abscess cavity behind the anus with an external opening in the median line. But there are other grave conditions present now which did not exist then.

The patient calls my attention to the distended condition of the abdomen and begs me to allow her to take her customary cathartic that she may reduce it. She tells me it is always so before she purges herself; but that after the medicine has acted it is perfectly flat, as you would expect it to be in a person so emaciated. She tells me that she usually does this twice a week, taking her medicine in the evening and spending from twenty-four to thirty-six hours in unloading the bowels, often sitting on the commode for two or three hours at a time. The movements at such times are at first solid, and often pieces will come away as large as her thumb, though sometimes the evacuation is moulded into the tape-like shape so often spoken of. After the solid matter has passed the fluid movements begin and continue for many hours, ending in the evacuation of a large amount of retained fæces and in great exhaustion of the patient. Note what she says about the size of the solid fæcal masses she passes, as I shall refer to it again.

The patient also refers to a lump, the size of two eggs, which occasionally appears in the left inguinal region and causes her a good deal of pain. This, she says, comes and goes and is not now present, but when I examine I find immediately under the abdominal wall a hard, nodular tumor, the size of my closed fist, which is somewhat movable, is tender on pressure, and is yet too resistant to be indented with the fingers. This is probably a fæcal impaction in the sigmoid flexure, and, from its hardness, one of long standing.

One other point of difference between her condition now and nine years ago. The physician who has had her in charge for the past two years tells me she has Bright's disease. Her urine has already been examined in the hospital several times, and on two occasions a trace of albumin has been found. I know that at one time a year ago the albumin was very marked. We can go further, and say that the patient probably has the waxy kidney so often found associated with prolonged suppuration.

This, then, is the history of the patient's disease and her present condition: sixteen years of suffering with incontinence of fæces, and with a foul discharge from the rectum; constant pain; and, in the end, chronic intestinal obstruction—what I judge to be an impacted colon—and waxy kidneys.

Let us now study the cause which has produced this result, and I wish to lead you to separate in your minds, as far as possible, the condition of ulceration of the rectum from that of stricture. It is true they are generally associated, that either may be the cause of the other, and yet the point I wish most strongly to impress upon you now is, that in just such a case as this, where we have both stricture and ulceration, the two conditions may be of vastly different relative importance. You saw me a few weeks ago exsect a stricture of the rectum though it had not advanced far enough to cause any obstruction and there was but slight ulceration. We were then dealing with malignant disease. You have also seen here a congenital stricture, which was so tight as to threaten complete obstruction at any moment, and associated with which there was no ulceration. You see to-day a stricture tight enough to make trouble, and yet through which solid fæces the size of the thumb will pass; and this stricture, grave as it is, is a matter of almost trivial importance in comparison with the ulcer-

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ation and suppuration which are associated with it, and in all probability caused it. In fact, I am not at all sure that the stricture we feel is the only one, for the same process which has caused this may as easily have caused another; and a stricture as low down as this, with a calibre admitting the index finger, will not generally give rise to the degree of intestinal obstruction from which this patient is suffering.

As to the nature of the ulceration which is killing this patient I do not think there is much doubt. There was no venereal history for six years after marriage and up to the time when this trouble began. There are none of the other usual causes of ulceration such as cancer, tuberculosis, or dysentery. The disease in all probability began as a simple erosion, possibly only a fissure, due to chronic constipation, made worse by impaction, accelerated by unsurgical treatment, and steadily advancing from the day of its formation till now.

You will see many such strictures as this in my service, though a smaller proportion perhaps than in private practice, and you have already learned not to jump to the conclusion that a patient must have had syphilis because she has a stricture of the rectum which is not cancerous. Any ulcerative process, if sufficiently extensive, may result in stricture, and there are many causes of ulceration besides venereal disease. I have seen ulceration, deep and extensive, result from the mere pressure of hardened fæces in the rectum, and such a mass as is now impacted in this patient's sigmoid flexure may easily lead to fatal perforation. I have seen also severe stricture result from neglected hæmorrhoidal ulceration, and to one of these causes, or both combined, I have no doubt the extensive disease in this case is due.

I will give you now a short account of the treatment this patient has had in the past. For the first seven years, the only time when a cure was possible, nothing radical was done, though the usual applications were made. Then nine years ago she was brought to me, as I have said, in much the same condition as now, and at that time it was a grave question whether a colotomy should not be done. In place of that I did a posterior linear proctotomy, dividing the stricture and the anus down to the tip of the coccyx; hoping to cure the stricture by subsequent dilatation, and the ulcer by the rest given to the parts and by subsequent applications. At that time the entire ulcer could be reached, and our efforts were in great measure successful. Six weeks after the operation I find that the following note was made: "The patient has gained much in flesh and general condition, and returns to her home with the incision not yet healed, but she is perfectly comfortable in every respect. Has natural, full-sized, painless passages, and has not been troubled by incontinence since operation." Six months later she again returned to me for treatment. The general condition was excellent. There was a marked decrease in the stricture tissue, and there had been no pain on defecation since the operation. But she was still troubled by the discharge of pus from the bowel, and the incision had not entirely healed. Treatment was, therefore, begun to cure the ulceration—rest in bed, fluid diet, and local applications. After three months she again left the city with the ulceration entirely healed except in the line of the incision.

Two years later I find the following note: "Some contraction, general and local condition excellent." Three years and a half ago I find the last note of her condition: "Tight annular stricture at one inch from anus. Patient to return for treatment." This she has now done. Her history for the past three and a half years has been that of steady progress in the disease. The stricture was cut again two years ago, but whether thoroughly divided or only partly I do not know. Fresh abscesses have formed and added greatly to her suffering, and she is now in the condition I have described.

In such a case as this there are three possible courses of treatment to choose from—incision, excision, and colotomy, and it is for us to consider which will do the greatest good.

I can again divide this stricture completely down to the sacrum in the median line behind, open up the abscess cavity, divide the fistulæ, and treat it as an open wound. This means many weeks of confinement to bed, much exhaustion, fresh suppuration, and no little danger, with the kidneys in the condition they are. But, worse than all this, I fear it would not mean a cure of the extensive ulceration. The stricture without the ulcer could be easily handled, though in her present condition any such operation is attended by considerable danger; but dividing the stricture would do little good unless the ulcer could be made to heal by subsequent treatment, and of this I have no hope.

We have now in the hospital a case which you have seen me operate upon where such a stricture as this has been completely excised, and I could do that operation in the present case. But in that case the mucous membrane both above and below the disease was sound, and the sphincters were unimpaired, so that after removing the cicatricial tissue it remained only to unite the two healthy ends of the gut and the disease was cured. Leaving out of consideration the great immediate risk of such an operation in this case, we could hope for no such result, for we could hardly remove the entire ulcerated surface, and even if we did, we should still be left with incontinence of fæces, for the sphincters have been irreparably ruined.

By colotomy, on the other hand, we shall hope to do this: Relieve the sufferer of the pain and danger which now necessarily attend the discharge of fæces, put an end to the formation of abscesses, and cause the ulceration to heal merely by doing away with the irritation of fæcal matter. And this we shall hope to accomplish with the least possible risk of surgical accident; for I consider that the operation of left inguinal colotomy would be attended by less shock than either of the other operations.

You may ask, Would the patient's condition with an artificial anus in the left groin be better than it is now? and I answer, unhesitatingly, Infinitely better. You cannot possibly be any more prejudiced against this procedure than I once was, but that prejudice has been entirely removed by clinical experience. The idea that an artificial anus properly made renders the patient loathsome to herself and friends, can hardly find support amongst those who are called upon to see many of these cases. I have too many patients now alive and comfortable, attending to their various duties in life—some of them having only one passage a day, and others having a passage only after a laxative—upon whom

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I have done this operation, for me to hesitate now from any sentiment.

I am asked as to the proper treatment of the fæcal impaction. With a colotomy the answer is easy, for if on cutting down to the gut I find it best to open it below the fæcal mass, I shall do so, probably breaking up the mass at the same time and allowing it to escape through the artificial anus when the gut is finally opened. If, on the other hand, it seems better to open the gut above the mass, I shall subsequently break it up and wash it out through the rectum by working at it from above. By either of the other two operations proposed the mass in itself increases the danger. I have already referred to the fact that it might by its presence cause a fatal perforation. We also know that in every such case of chronic obstruction the bowel above the disease is dilated and thinned, sometimes to a remarkable extent. To attempt, therefore, the removal of such a mass, either by cathartics to increase peristalsis, or by injections of large quantities of water to soften it, would be an operation by no means free from danger. In fact, the patient's habit of taking frequent purgatives may at any time cause a fatal result. I have known this to happen in one case identical with this, while the patient and myself were trying to arrange a convenient time for a colotomy. Sunday was his day for evacuating his bowel, and he had taken strong purgatives every Saturday night for months. But the effort was made once too often; the dose was taken as usual, and in a few hours he was dead from rupture of the bowel above the disease.

We will now etherize this patient, make a more thorough examination under ether than is possible without it, and will then operate by the method which seems best.

The patient being under ether in the lithotomy position, you observe first these fistulous openings behind the anus. The director does not pass into any abscess cavity; on the contrary, the tracks are found to be superficial, and as I lay them open one after the other we have a resulting incision only about two inches long and half an inch deep in the median line behind the anus. In other words, the sphincter has once more been cut, but this is evidently not as grave a condition as I had been led to suppose.

Next I examine the rectum. At one inch from the anus I find a tight stricture but of limited extent, and as I gently force my finger through it I find extensive ulceration above, but not to any such degree as would account for the patient's history. Where does this perpetual discharge of foul pus come from, and why is she suffering from intestinal obstruction? As I force my finger higher up the bowel, I find that there is no rectal pouch, but that the rectum is occluded by a round, smooth mass pressing upon it from in front. I find it impossible to get beyond this mass, but as I place my left hand on the abdomen and practise conjoined manipulation I find that my supposed fæcal impaction resolves itself into an immense abscess in the region of the left broad ligament; and pressure in the pelvis causes the tumor to decrease in size while there is a flow of six or eight ounces of fetid pus from the rectum, forced out by the pressure on the abdominal tumor. In this way, then, are the doubtful points in this case explained. There is a second stricture to account for the obstruction, and the fæcal impaction resolves itself into a large pelvic abscess which opens into the rectum, furnishes the foul discharge which I supposed to be due to ulceration, and obstructs the rectum by pressure.

And now what shall we do for the patient? She has an old stricture of the rectum. She has fistulæ which I have just cut. She has a pelvic abscess on the left side which is exhausting her by suppuration. She has chronic intestinal obstruction and amyloid degeneration of the kidneys. What can we do? The answer is, Very much can be done. Let us take the conditions in their order.

The fistulæ are already cured by the incisions you have seen me make.

The stricture is rendered harmless, though not cured, by the dilatation of my finger in this examination.

The ulcer above the stricture is by no means as extensive as I believed; and could be cured, as it was nine years ago, by local treatment.

This leaves us with an abscess in the left broad ligament occluding the rectum by pressure, and for this I shall at once do colotomy. The abscess is for the present incurable. It cannot be made to heal, it exhausts the patient, it produces degeneration of the kidneys, and it threatens the life of the patient by its mechanical pressure. I will show you to-morrow a pathological specimen exactly analogous to this which caused the death of a patient—exactly as this may do at any time—by the exhaustion of suppuration, and finally by complete obstruction.

Since we cannot now cure the abscess, we will do what we can to render it harmless—that is, we will do a left inguinal colotomy—do away with the chronic intestinal obstruction and the irritation of the fæces to the rectum; try to get the patient into better condition; and, perhaps, subsequently attack the abscess directly through the rectum with some hope of success.

I will ask my associate, Dr. Gibbs, to operate, and while I assist I will call your attention to the points in the operation.

You observe that all the instruments we have thus far used about the rectum are now discarded, and that the most absolute antisepsis is used.

The incision crosses an imaginary line from the left anterior-superior spine to the umbilicus, at one inch and a half from the bony point; and is about two inches long. Step by step we work down on a director to the peritoneum, securing the bleeding points as we advance, and finally stopping all oozing by the steady pressure of a dry towel.

As the peritoneum is opened a coil of gut protrudes, and you see me at once close the opening with two fingers which have been carefully washed, and pass them deep into the pelvis for exploration.

I can feel the abscess wall distinctly. On its upper free peritoneal surface over a space the size of the palm it is much thinned and flaccid from being emptied of its contents. Deeper in the pelvis the walls where they press upon the rectum are dense and thick. Withdrawing my fingers the same coil of gut protrudes, and we see that there is a broad *longitudinal* band of muscular fibre and several *appendices epiploicæ*, showing us that we

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unquestionably have, what we must always be certain of at this stage, a portion of the large gut in the wound. Were this not large gut, I should slip it back and bring up another loop from the pelvis.

You perceive that while I am talking we are having constant difficulty. The gut is much distended and thinned, it is the size of my fist; the patient is trying to vomit, and the gut is forced with great violence out of the wound. We cover it with a large flat sponge, both of us press it gently and firmly back into the abdomen, and the ether is pushed till the vomiting ceases.

Now, when all is quiet and the gut reduced, Dr. Gibbs passes a harelip pin first through the skin at one side of the wound, then through parietal peritoneum on the same side, then under the gut through its mesentery, then through parietal peritoneum on the other side, and finally through the skin. By this we have fastened the gut where we want it; we have secured a sharp fold or spur in the gut which will effectually occlude it at this point; and we have so passed the pin that the proximal end of the gut in the wound is much larger than the distal portion beyond the pin. In other words, when the gut is finally opened there will be two orifices. The proximal will be large, the distal small, and they will be separated from each other by a sharp bend in the wall of the gut where it passes over the pin.

The rest of the operation is simple. Eight sutures are introduced each passing through skin, parietal peritoneum, and the muscular wall of the gut. None perforate the calibre of the gut, and whenever possible, they are passed through the heavy longitudinal fibres for additional strength. I wish you to note that I do not draw the gut as far out of the wound as I often do in these cases, because should I deem it best subsequently to attack this abscess *per rectum* and should I succeed in closing it, I may want also to close this artificial anus, and I prefer to leave as much of the wall of the gut intact after my opening as possible.

The sutures being passed we cover the wound, without opening the bowel, first using protective, then wood-wool tissue, then cheese-cloth and bandage. The protective is necessary to prevent the adhesion of the gut to the dressing. After three days the dressings will be removed, the loop of gut will be opened by a longitudinal incision, and the edges will be trimmed with scissors down to the margin of the skin. This will not require ether, and, unless the patient sees what we are doing, she will be unconscious of the operation. The gut is not sensitive to pain.

The operation is completed. The patient will in all probability do well unless the kidneys give trouble. On the third day I will open the bowel and you shall know the result. My only regret is that you will not be able to see the benefits which almost invariably follow this operation in these cases, by having the patient under observation for the next six months. Still, the case is an unusually complicated and interesting one, and teaches many things. You heard my doubts as to the existence of a second stricture above the first, arising from the clinical history, and you saw them verified, the real cause of the obstruction being the abscess and not the old cicatricial contraction near the anus. You saw my error in mistaking an old abscess and pelvic inflammation for a fæcal impaction cleared up under ether. The mistake was a natural one, but none the less instructive.

You have seen us do a colotomy for a combination of diseases each one of which might possibly be handled by itself, but the combination was rapidly exhausting the patient. If she does well, gains strength and flesh, and seems in good condition for the effort a few months from now, I shall, in all probability, divide the stricture, open this abscess freely into the rectum, and try to induce it to close. If we succeed in this and the rectum is not occluded by the pressure of the pelvic exudation, which I fear will be the case, there is nothing to prevent our closing this artificial opening and restoring the fæces to their normal course; though the patient will by that time be so comfortable that she may not elect to undergo another operation.

NOTE.—There was no rise of temperature after the operation. The gut was opened on the third day. The pin was removed on the seventh; and the sutures allowed to work their way out.

ORIGINAL ARTICLES.

ESSENTIAL PAROXYSMAL TACHYCARDIA.[1]

BY JOHN A. ROBISON, A.M., M.D.,
OF CHICAGO, ILL.

THE subject of tachycardia, or rapid heart action, has been of interest to me for some years, and I have been surprised to see how meagre is the literature bearing upon this important form of heart disease. An editorial on Essential Tachycardia in the *New York Medical Record*, November 30, 1889, gave a brief *résumé* of an exhaustive article on this subject by M. Bouveret, of Paris. I procured the September and October numbers of the *Revue de Médecine*, and have deemed the article of such importance that I give the following abstract:

Bouveret describes "essential paroxysmal tachycardia" as a peculiar affection of the heart characterized by paroxysms of cardiac palpitation, occurring in adults, in which the pulse increases to 150, 230, or even 300 beats per minute. He divides the paroxysms into two kinds, viz., short and long attacks. The short attacks last from a few minutes to four or five days. In these the principal symptom is rapid beating of the heart. If the attack lasts four or five days signs of passive congestion of the lungs appear, often followed by turgescence of the jugular veins, cyanosis of the face, visceral stases, and œdema of the extremities. The long attacks may last days, weeks, or even months. The symptoms are more grave; acceleration of the heart-beats remains the dominant symptom, but the secondary symptoms are more or less serious; there are disturbances of the respiration and general circulation,

[1] Abstract of paper by M. Bouveret in the Revue de Médecine and report of a case. Read before Chicago Pathological Society, March 10, 1890.

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feebleness of the heart's action, dilatation and engorgement of the heart cavities; cough is frequently present, and the expectoration is mucous and viscid, like that in bronchial catarrh or pulmonary congestion. Often the sputum is bloody, and hæmoptysis frequently occurs. Dyspnœa is more or less marked, the respirations frequently being 40 per minute. Pulmonary resonance generally remains normal; sometimes, however, becomes exaggerated. Facial cyanosis and jugular turgescence are pronounced.

The cerebral symptoms are those of arterial anæmia and venous stasis of several days' duration. Restlessness, insomnia, and sometimes delirium are present, and, in some cases, anorexia, nausea, and vomiting. Bouveret noticed one case in which the attack ended in vomiting. Diminution of the urine does not occur in all cases. The skin remains pale and dry during the whole attack. The temperature is normal in the short attacks, but rises from one to three degrees during a long attack. This is probably due to the secondary pulmonary congestion.

Subjective symptoms. The vital forces seem prostrated. The patient experiences a heaviness, extreme weakness, and a general sensation of cold. Pain is seldom present, but there may be a sensation of constriction in the neck, thorax, abdomen, epigastrium, back, or præcordium. After the attack the pulse falls from 200 or 250 to 60 or 70 pulsations per minute. Frequently two or three slow, energetic contractions of the heart mark the transition to the normal pulse-rate. At that moment many patients experience particular sensations: one felt prostrated by an indefinable *malaise*, and it seemed to him that he would die; another patient, a woman, believed that there had been a rupture of some kind in the cervical region.

The secondary symptoms disappear slowly. It takes several days to efface all traces of the pulmonary congestion, venous stases, ascites, or peripheral œdema; but the secretion of urine is usually promptly established. Sometimes a transient polyuria ensues.

Course, Duration, and Termination.—The patient, like the epileptic, always remains liable to another attack. In the intervals his general health is good, and there exists no symptom indicative of trouble of the heart, nerves, or nerve-centres. This integrity of the heart and all the organs is another characteristic of essential paroxysmal tachycardia.

The duration of the malady is long and indeterminable. It may exist from one to fifteen years. The cases that survive long never indicate that they are cured, and they probably are always liable to recurring attacks. After the paroxysms, even those of long duration, there are never signs of organic heart disease. But in one case observed by Bouveret the acute dilatation merged into chronic dilatation. Though the affection seems functional, there is diminished power of the heart, the attacks become more frequent, the secondary symptoms disappear less rapidly, and the prostration of the vital forces persists longer after the cessation of the palpitations.

This form of tachycardia is certainly a grave malady. Bouveret's observations warrant the conclusion that it is almost always fatal. Of eleven patients, only one seemed to be actually cured, several years passing without a new paroxysm. Four patients died either from syncope or systolic paralysis. As many as six survive, but are subject to new attacks.

It is impossible to prognosticate concerning an attack, especially at the beginning. The long attacks are undoubtedly grave. Bristowe, of England, reports a case that terminated favorably after the paroxysm had lasted fifteen weeks, the pulse returning to normal, and the patient resuming his occupation.

Bouveret gives the following as signs of a fatal ending: A tendency to syncope, very extensive pulmonary congestion, great agony in the præcordial region resembling angina pectoris, and renewed acceleration of the heart-beats under the influence of bodily exercise or emotion.

Etiology.—Essential paroxysmal tachycardia has not been observed in infants. The ages of the patients observed varied from nineteen to fifty-two years. Sex, antecedent hereditary, hygienic, or pathological conditions seem to exert no causative effect, but the abuse of coffee and tobacco is apparently of influence.

Treatment.—Anæmia assuredly favors the development and persistence of the attacks, and if present it must be combated with ferruginous preparations and tonics and the proper hygienic and alimentary treatment. Bristowe has given iron to the larger number of his patients, and it seems to have diminished the frequency and intensity of the paroxysms in a number of cases. It is equally important to treat digestive difficulties, such as dyspepsias and diarrhœas, and disabilities of other portions of the organism. During the attacks complete rest must be enjoined. The dorsal decubitus is preferable, and the larger portion of the patients spontaneously seek this position, while others prefer to lie on the right side. Lying on the left side, quick movements, such as rising suddenly to the upright position, or emotional disturbance, aggravate the attacks. The greatest danger during the paroxysm is syncope and heart exhaustion, and during this time the patient should not be examined. Digitalis is certainly the remedy of first importance to reduce the acceleration of the pulsations of the heart. The doses which Bouveret employed were 7½ grains daily of the powdered leaves made into an infusion, four or

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five days consecutively, until it moderated the action of the heart. Caffein, nitrite of amyl, and nitro-glycerin have not proven efficacious. Czermak has shown that compression in the cervical region over the course of the carotids, especially on the right side, slows the pulsations of the heart. Quincke has related his experience with this compression in a large number of cases, and has arrived at the conclusion that the lessening of the pulsations of the heart is due to pressure on the pneumogastric nerve. Deep inspirations, and suspending the respirations, are measures which have been used with a certain degree of success. Nothnagel believes that a deep, forced inspiration stretches the pulmonary peripheral twigs of the pneumogastric nerves and transmits an inhibitory influence to the nerve centres. Bristowe records one case in which the inhalation of small quantities of chloroform lessened the gravity of the attacks. Morphine has been given with good results. Venesection has been employed beneficially when there was dilatation of the right cavities of the heart and consequently an elevation of the venous tension and the rapid development of visceral stases. In one case observed by Bouveret the application of a blister over the præcordial region was beneficial. Bouveret believes at present that the only efficacious treatment for an attack of essential paroxysmal tachycardia is compression of the pneumogastric in the cervical region, as practised by Czermak and Quincke; but, as he has applied the treatment only three times, it must be admitted that we cannot as yet estimate the true value of this method.

W. A. R., aged sixty-two years, American born; an active worker, physically and mentally, all his life. For the past twenty years has been foreman of a large manufacturing establishment. His father died suddenly, presumably of heart disease. His mother died at an advanced age, of paralysis. The patient's general health has been excellent, with the exception of trivial attacks of dyspepsia, when he would experience palpitation of the heart in a mild form. He has been extremely moral and temperate, except in the use of tobacco and coffee. Has chewed tobacco *excessively* all his life until three or four years ago, when he almost ceased using it. He was in the habit of drinking from one to three cups of strong coffee with each meal until of late years. About one year and a half ago he was attacked with palpitation of the heart, his pulse rising to almost 150; there was a sensation of impending dissolution, extreme malaise and weakness, and cyanosis of the face and extremities. The physician who attended him said that he could pick up the skin and that it had lost its elasticity and color and resembled the skin of a corpse. The first attack lasted only a few minutes, but the patient was left in an exhausted state from which it took him two days to recover. After this attack he became extremely nervous, apprehensive of sudden death, and melancholic. At intervals of a few weeks he had several attacks, each recurrence lasting longer and leaving the patient more exhausted. But he would not give up his position in the factory until February, 1889. On one day in that month it was necessary that some work should be done on a "champering" machine, and, as the usual operator was absent, Mr. R. went to work at the machine himself, and worked very hard for two hours. Suddenly he was seen to stagger and fall, and when found he was almost in a state of collapse. His heart was beating so rapidly and feebly that its pulsations could not be counted, nor could a radial pulse be felt. He was cyanotic, the skin being cold and clammy. Notwithstanding the severity of the attack, after an hour's rest he arose and went one mile to his physician's office, and had a second attack there. Aromatic spirit of ammonium and whiskey revived him. But it was some days before he was able to be up and around again. He resigned his position, and at my suggestion was placed on cod-liver oil and whiskey. He improved very much during the summer, although he had slighter attacks at lengthening intervals. He noticed one fact, and that is, that a strong cathartic dose of calomel or blue mass cut short the attacks and sometimes prevented them.

The last attack occurred about three weeks ago, while in his office—the patient now being in the real estate business. He wrote as follows: "This morning I had a slight attack of palpitation while writing. It has passed away, but has left me with a sensation of fulness in the head. At the present time of writing my pulse is 130." By remaining away from business half a day all traces of this attack disappeared.

In this case digitalis seems to exert no beneficial influence. I have advised him to try compression over the cervical pneumogastric.

Aromatic spirit of ammonium and whiskey prove to be of the greatest service in shortening the attacks in his case. Nitroglycerin and nitrite of amyl have not been of any service. From the use of pepsin and cod-liver oil with whiskey the patient's weight has increased from 145 to 158 pounds.

Once or twice during the attacks a murmur could be heard with the first sound of the heart near the ensiform appendix. It was supposed to be a systolic tricuspid murmur. Dyspnœa has never been present, although cyanosis is sometimes extreme.

79 STATE STREET.

SALICYLATE OF CINCHONIDINE.

BY R. B. McCALL, M.D.,
OF GEORGETOWN, OHIO.

ATTENTION has been recently directed to salicylate of cinchonidine, a drug which is probably but little known to the profession at large. From circulars issued by the manufacturing firm of John Wyeth & Co., of Philadelphia, I first learned of the high estimation in which it was held by them, it being considered almost a specific for cases in

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which symptoms of both rheumatism and neuralgia are manifested. Like many others, I had long felt the need of a remedy that could be effectively used in such cases where the peculiar signs of the two diseases are blended together, and for that reason the more difficult of management. Salicylic acid, the salicylates combined with quinine and ferric salts and supplemented by anodynes, massage, and electricity have been employed with a measure of confidence and success, and yet there has been a very large percentage of unsatisfactory results.

It is useless to speculate as to whether two distinct pathological states exist in rheumatism and neuralgia. For the purposes of this article it will suffice to recognize the existence of two unrelated morbid conditions modifying and intensifying each other's effects—a condition we may call either rheumatic neuralgia or neuralgic rheumatism.

For symptoms, we may have impairment of the functions of a few or many joints—notably the shoulders, hips, ankles, and less frequently the smaller joints of the hands and feet. Tumefaction may be present in the larger articulations, but very generally is not appreciable; friction, soreness, and stiffness are always present.

To explain how salicylate of cinchonidine is more effective in these states than salicylic acid or the salicylate of sodium with sulphate of quinine would be difficult, and if accomplished would possibly have little practical value. Salicylate of cinchonidine probably owes none of its efficacy to its relationship to quinine, but solely to qualities engendered by the union of cinchonidine with salicylic acid. Given alone, its antiperiodic effect is very inferior to that of quinine, but exactly adequate to the demand in the present instance. The well-known value of salicylic acid in both rheumatism and neuralgia is increased by its intimate association with cinchonidine, and thus the two together, considered on theoretical grounds alone, must be acknowledged to possess those therapeutic qualities that are needed to meet the above described indications.

Before presenting the following cases, the writer may be allowed, in the way of a brief recapitulation, to state that with more or less strongly pronounced signs of rheumatism and neuralgia, such as pain or soreness and stiffness of the loins, with or without impairment of function of the smaller joints, with a history of previous similar attacks, and no permanent organic lesion, most satisfactory and in a great majority of cases, lasting relief will follow the faithful administration of salicylate of cinchonidine. The following are some of the cases treated by me during the year.

Case I.—Mrs. P., aged sixty-nine years, full habit, good appetite. She was nearly helpless, unable to change posture in bed without assistance, or to walk, on account of pain and stiffness of muscles of back. Temperature 99.5°, pulse 85 and intermittent. Strychnine restored the heart to its normal action but had no apparent effect on the condition of muscles. I therefore ordered the salicylate of cinchonidine in doses of two and a half grains four times daily, which after three days was increased to four grains. The patient's condition rapidly improved from the third day. On the twentieth day she was discharged and no relapse has been reported.

Since recovery she has been entirely free from discomfort, has a good appetite and sleeps well. The quantity of the drug taken in a single day never exceeded twenty grains, and averaged about fifteen grains. Not the slightest unpleasant effect could be attributed to its use. Patient gave a history of previous recurring attacks extending over many years from which she had been able to obtain only partial relief.

Case II.—Mrs. K., aged fifty years, plethoric. Her sleep was broken; temperature normal; pulse 80, not intermittent, though slightly irregular. She complained of palpitation and was frequently short of breath. Tenderness and rigidity of sterno-cleido-mastoid, pain in back of neck from occiput downward; muscles of abdomen tender; pain and stiffness of loins not so pronounced as in preceding case. Mrs. K. received the salicylate of cinchonidine in five-grain doses, three times daily, in capsules.

Improvement soon followed, the pain and stiffness disappearing, and the organs resuming their normal activity. Anorexia and insomnia, which had existed, were replaced by a natural appetite and sound sleep. No recurrence.

Case III.—Mrs. E., aged forty-two years, temperature 98.8°, pulse 85, irregular and occasionally intermittent; appetite capricious; sleep broken as a rule. Has had hæmorrhoids for eight years with fissure of anus. As in the other cases, there was a history of frequently recurring backache, sometimes so severe as to render the pursuit of her usual occupation impossible.

Notwithstanding complications, the remedy afforded considerable relief.

Case IV.—A colored woman, poorly sheltered, fed, and clothed. She was attacked with rheumatism and for three weeks was unattended. Temperature 99°, pulse 110, feeble and irregular; no appetite; unable to sleep from pain; urine scanty and high-colored; dull pain or soreness in most of the joints, pain and stiffness of lumbar muscles.

With strychnine, laxatives and diuretics, salicylate of cinchonidine was prescribed, and produced most gratifying results. Swelling subsided, soreness of joints and muscles disappeared, and activity was soon restored.

Case V.—An active, hard-working woman, with normal temperature and pulse. She was unable to sleep from persistent pain and discomfort located in small of back. The pain was relieved by the salicylate of cinchonidine in a very short time. This patient had suffered for years and assured me that she had never received such relief before, and ex-

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pressed the desire to have capsules with her so that she could take them if needed.

CASE VI.—Was a woman aged fifty years, who for more than two months had been unable to attend to her household duties on account of pain and stiffness of muscles of back and abdomen. To her the salicylate was given in four-grain doses, three times daily, and rapidly caused complete and permanent relief.

These cases could be supplemented by others, but a sufficient number has been given to show conclusively that salicylate of cinchonidine has a positive therapeutic value in a certain class of diseases characterized by the presence of lumbar pain and immobility.

The leading symptom, therefore, and the one that should guide the physician in the use of the remedy is pain and stiffness located in the lumbar region.

The best forms in which to administer the drugs are tablets or capsules. For convenience the writer has been in the habit of employing capsules. I venture to prophesy that the drug will be found very useful in the treatment of the more simple forms of neuralgia and rheumatism and in the various neurasthenic states so frequently met.

SECONDARY CONSEQUENCES OF SURGICAL SHOCK.[1]

BY J. F. TODD, M.D.,
LATE COUNTY PHYSICIAN, CHICAGO, ILL.

THIS paper is submitted for consideration with special reference to the probable cause of the death of one Robert Burns, a native of Ireland, who, at the time of his death, was fifty-one years of age, and had been married twenty-five years. His history sheet at the county hospital is as follows:

Occupation, canvasser. Diagnosis, carbolic acid poisoning and ulcer of leg. Admitted March 27, 1889, discharged April 6, 1889. While on a spree attempted to poison himself by taking carbolic acid. Treatment: March 27th, whites of three eggs, milk and lime-water and sodium bicarbonate *ad libitum*. April 1st, potassium bromide, 15 grains, three times a day.

He was sent to the Detention Hospital on the night of April 9th, from there to the Insane Asylum at Dunning on the 11th, where death occurred on the 26th of the same month. His wife and brother-in-law testified that his general health had been good for twenty-five years, until a short time previous to his commitment to the Detention Hospital, but that he had the habit of occasional bouts of drinking, and that for some months he had shown symptoms of melancholia. They testified that on the 27th of March, and the 6th and 7th of April, they had seen him stripped naked while bathing and changing his clothes, and that there were no marks or discolorations on his body, except the ulcer on the left leg. Two male attendants at the Detention Hospital testified that they saw him naked in preparation for bathing on the night of the 10th of April, and that there were no marks or discolorations on the body, save the ulcer on the leg. Charles Beck, *alias* Hunter, testified to having witnessed a number of brutal attacks upon Burns by several of the attendants in the Insane Asylum at Dunning.

The autopsy was made about forty-eight hours after death. Present: Drs. Egbert, Hektoen, Perkins, and myself. The conditions found were as follows: Weight about 150 pounds, height 5 feet 9½ inches; *rigor mortis* absent, except in lower extremities, where it was slight. Full set of teeth. Hair dark gray and abundant. Post-mortem discolorations well marked on posterior surface. A slightly gaping linear scalp wound in the right parietal region near its centre. The wound was one inch long, and did not extend through scalp. On the outer surface of left arm, seven inches below the shoulder, was a contusion with extravasation of blood in the subcutaneous tissues one and three-quarters by two and one-half inches in area. On the outer surface of right arm just below the shoulder a contusion with extravasation two by two and one-half inches in area; two small contusions just below the right patella. A contusion with extravasation two by two and one-half inches in area, over the eleventh left rib anterior to a line from anterior margin of axilla downward. A contusion eight by twelve inches in area in the left inguinal region with numerous thrombi in the vessels of uninjured surrounding tissues. The tissues were filled with blood and pulpefied down to the fascia lata and abdominal muscles; the surfaces of all of these contusions were purplish-black, except that on the right arm, which had a yellowish-green margin. There was found a complete fracture of the sternum just above the cartilages of the fourth ribs with recent extravasation of blood above and beneath the line of fracture, and complete fracture of the eleventh left rib about three inches from its vertebral articulation. Subcutaneous fat abundant. Transverse colon filled with scybalæ; pleural and pericardial cavities normal; cavities of heart partially filled with liquid blood; valves found competent by water test; pericardium and endocardium and arterial tunics normal. Walls of right heart somewhat fatty, and right ventricle slightly dilated. Lungs normal, except that lower margins were somewhat œdematous; sections of both lungs crepitant under pressure and floated in water. Stomach contained a small amount of dark-colored liquid and in all respects normal; liver normal in size but slightly fatty; gall-bladder full of bile; spleen, pancreas and intestines normal. Kidneys showed a small amount of fat; normal in size. Capsules stripped off readily; cortical surface dark-red, one-quarter

[1] Read before the Chicago Medico-Legal Society, March 1, 1890.

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inch in thickness, with normal markings. Dura mater adherent throughout and slightly thickened; otherwise the brain and meninges presented no abnormal appearances.

Based upon the foregoing facts, I gave the opinion to the coroner's jury that the death of Burns resulted from the injuries described, and that it was a consequence of shock and subsequent prostration. In support of the major proposition, Dr. J. K. Egbert, Assistant County Physician, and Dr. Charles F. Perkins, Assistant Demonstrator of Anatomy, in Rush Medical College, testified that in their opinion death resulted from shock produced by the injuries. Dr. Hektoen testified as follows: "In the absence of any other obvious cause it would seem that the contusions and fractures found upon the body would have a great deal to do with the death."

The coroner then asked: "Suppose that Burns was fairly healthy and had sustained the injuries from violent kicks or blows, what would be your opinion?" Dr. Hektoen answered: "I would have to say they might cause death." This *résumé* of facts and opinions has been given in order that the questions under discussion may be better understood. Dr. H. N. Moyer[1] submitted a paper to the Chicago Medico-Legal Society on the 9th of last October, in which he assumed that the facts disclosed failed to justify the opinion that the death of Robert Burns was caused by the injuries. The propositions upon which he based his argument were: 1. Fatal injuries must produce their effect, either by immediate shock or by remote and secondary consequences, such as hæmorrhage, inflammation, abscess, septicæmia, fat embolism, etc. 2. If death cannot be traced to one of these conditions, some other cause must be sought.

In a large proportion of deaths from shock the cause is so obvious that medical evidence is a mere formality to fulfil the demands of law; in such cases intelligent lay evidence would subserve all other requirements. A penetrating wound of the heart, extensive laceration of the lungs or liver, crushing of the bones of the skull or spinal column are properly recognized by the laity as mortal injuries; the character of such injuries is so rapidly fatal that the refinements of medical science and the subtleties of law fail to mystify even the average jury. In this class of cases the evidence is called positive.

In a certain proportion of cases the cause of death is not clearly recognizable. Evidence of serious injury may co-exist with pathological conditions tending to produce death from exhaustion. In this class of cases the evidence is called negative. It is the class that supplies the fees to criminal lawyers and professional experts, too often at the expense of the best interests of society. There are apparently no rules of evidence or degrees of professional skill that mitigate the discrepancies of expert testimony. Controversies as to the cause of death usually begin with the post-mortem examination of the subject, the statement of the facts discovered, and the inferences deduced from the facts. It is obvious that opinions may agree as to the fatal effects of an injury and vary as to the mode of death, and that opinions will vary upon all questions that are incapable of demonstration. It is admitted that the physician who makes a post-mortem examination should appreciate the importance of his duties, for the reason that they relate to the welfare of society. It is not essential, as alleged by Dr. Moyer, that "he should ever hold in mind the rules governing legal evidence," or even possess a knowledge of them; but it is essential that he should render a truthful statement of all the facts discovered and an honest opinion derived therefrom, uninfluenced by the raspings of cross-examination or the opposing influence or criticism of professional experts. He should formulate and express his opinions with due deliberation, estimating the tendencies to death from causes antecedent to alleged fatal injuries.

If the heart cavities are dilated he should seek for valvular incompetences or vascular degenerations, and evidences of organic disease of the lungs, liver, and kidneys; if the dura mater is thickened and adherent, he should conduct the examination with reference to organic disease of the brain, such as undue vascularity or morbid effusion. By this method of examination and exclusion an opinion as to the cause of death can alone develop an intelligent and well-founded belief. In the Burns case the nature of the injuries necessarily implied the application of great violence, granting a normal condition of the bony structure; no other opinion can be entertained. Hamilton[1] states that "fracture of the sternum, in itself, implies the application of great force," and that "the force requisite to fracture a rib is scarcely less." "The most common causes are direct blows of very great force." It may be assumed that such a force acting upon an enfeebled subject, as Burns was known to have been, was quite sufficient to produce shock. Dr. Kiernan certified to the board of health that death resulted from phthisis and the exhaustion of melancholia. He recognized that exhaustion was the chief factor in the case, but was unaware that the patient had sustained the fearful injuries that the autopsy alone could disclose. Granting that exhaustion due to lack of food and sleep and the nervous irritability of insanity existed, if they were supplemented with

[1] Medico-Legal Journal, New York.

[1] Fractures and Dislocations, p. 168.

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the effects of a force sufficient to produce a complete fracture of the sternum, and a complete fracture of a rib, and add to that as a source of constitutional irritation numerous contusions, one of which caused the effusion of a pint of blood in the cellular tissues of the abdomen, with a breaking down of subcutaneous tissues to the muscular fascia over an area of eight by twelve inches, we are forced to the conclusion that shock of dangerous severity, if recovered from, must have been followed by profound exhaustion. It is no answer to such inevitable conclusions to say dogmatically that "insane subjects are not susceptible to the influences that produce shock in the sane, and that in many instances the effects are directly contrary."[1] My observations of this case and the weight of evidence relating to his symptoms are to the effect that Burns was morbidly apprehensive and hyperalgesic, conditions which Spitzka[2] mentions as sometimes coexisting. Savory states that "animals exhibit the characteristic phenomena of shock, and the insane surely do." It has developed in states of profound anæsthesia, and it is doubtful if any condition of animal life can preclude its occurrence on the application of certain stimuli. Forbes Winslow[3] says: "Much has been written on the subject of the insensibility of the insane with a view to establishing that it exists in a majority of cases of mental disease. Such an opinion could only have been expressed by writers practically unacquainted with the ordinary phenomena of insanity. The insane as a general rule are not reduced to a condition of anæsthesia. In many cases the sensibility, psychical as well as physical, is acutely and painfully present." Ross[4] says that all conditions which tend to impair the nutrition of the nervous system, as exhausting diseases, cerebral anæmia from whatever cause, dissipation, prolonged pain, and depressing passions, predispose to the production of shock. It is quite as difficult to fix a time-limit to the duration of shock, or a definite morbid anatomy for its secondary consequences, as it is to determine what physical or mental condition constitutes a bar to its occurrence. The fact is, that notwithstanding the advancement in neuro-pathology during recent years the essential nature of nerve force and the etiology and pathology of shock are but little better understood than they were fifty years ago. It is admitted that shock from sudden and violent mental impressions involves substantially the same pathological conditions that exist in shock, from physical injury; chorea, convulsions, hysteria, epilepsy, arrest of the lacteal and menstrual secretions are recognized as occasional secondary results.[1] Trousseau and Marshall Hall have given histories of paralysis, insanity, catalepsy, jaundice, and gout caused by sudden mental impressions.[2] Savory states that sudden fright has been known to produce deafness and that it is not uncommon to have various forms of local disease referred to some shock which the system has sustained. If the reflex effects of mental shock may so profoundly affect innervation that functional disturbance is continued in many cases for a series of months or years, and in exceptional instances during a lifetime, it is, to say the least, illogical to limit the effect of surgical shock to the period of suspension of nerve function that characterizes the condition of collapse, and still more illogical to insist that fatal secondary results must necessarily coincide with definite, recognizable pathological changes. The constitutional conditions, congenital and acquired, that predispose to shock, the widely varying degrees of tolerance to injury and pain, and the diversity of degrees and character of injuries sustained, render it exceedingly difficult to predict with certainty either the duration or final result of no small proportion of such cases. These considerations undoubtedly have deterred surgical authorities from fixing a time-limit to the duration of shock or the period of nervous exhaustion immediately succeeding it. *It is a problem involving an estimate of vital force present, supplemented by possible contributions dependent upon the functioning power of the sympathetic nervous system, every cell of which may suffer functional embarrassment, the degree and exact character of which we are profoundly ignorant.* Erichsen[3] states that "On recovery from the immediate and depressing effects of shock secondary symptoms supervene. These are chiefly such as arise from lesions of the sympathetic system of nerves, and consequent disturbances of its vaso-motor action." Savory says that "A state of collapse may end neither in immediate death nor in direct recovery, the reaction may be imperfect and that condition which Travers has described as 'prostration with excitement' may supervene and this may lead indirectly to an unfavorable or fatal issue. In patients whose nervous systems have been shattered by intemperance or who have been exhausted by excessive mental strain or nervous excitement, the nervous symptoms that accompany the febrile disturbance may form so prominent a feature of the case as almost to justify the description of a third type, as has sometimes been done under the name of irritative fever. Often the fever is from the first of an asthenic type, espe-

[1] Dr. Kiernan: Discussion in Medico-Legal Society of Chicago, October 9, 1889. Medico-Legal Journal, New York.
[2] Manual of Insanity, p. 68.
[3] Brain and Mind, p. 355.
[4] Diseases of the Nervous System, vol. ii. p. 634.

[1] Tuke, Influence of the Mind upon the Body.
[2] Holmes's System of Surgery, vol. i. p. 150.
[3] Science and Art of Surgery, vol. i. p. 150.

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cially in drunkards, in whom it resembles delirium tremens, ending in death from exhaustion." Agnew[1] says: "In some instances there exists an exciting struggle between reaction and depression, the system makes a gallant effort to recover from the influence of the violence. The symptoms in some measure abate, the recuperative effort is not sustained, and so the conflict is waged, now the one and then the other yielding, until the struggle closes either by recovery or fatal collapse." In illustration of this variety he gives the history of a fracture of a thigh and pelvis with sphygmographic tracings that terminated fatally on the evening of the fourth day after the receipt of the injury. Ross[2] says: "Reaction may gradually give place to health, but in some cases relapses are not infrequent, and convalescence is then protracted even when recovery takes place." Gay states that operations on neurotic subjects are often followed by great nervous excitement out of all proportion to the severity of treatment, and that convalescence is not only lengthened but the result is doubtful. Van Buren[3] states that "when an habitual drinker of spirits has been seriously injured reaction may gradually merge into the peculiar condition known as delirium tremens." Pilcher[4] says: "In the most favorable cases reaction is gradual and progressive, though it may occupy many hours or even days in its course."

Gross[5] writes that "the duration of the symptoms of shock is subject to no little diversity; at times they pass off in a few minutes or, at furthest, in a few hours; at other times they last for several days, and even then do not pass off completely. When very severe, death may occur instantly, or the case may linger on for some time in a state of doubt and uncertainty, with now and then an attempt at reaction, and at last prove fatal."

The foregoing quotations from standard authorities fully sustain my position that the primary and secondary effects of shock necessarily depend upon the constitutional condition of the subject, and justify the conservatism of the opinion that an exact time-limit to the phenomena of shock is impossible to determine. The question now arises as to the character of the secondary consequences. It will be conceded that the injuries that Burns sustained were adequate to produce shock of such severity as to provoke reactive fever. The large mass of broken-down tissues in the inguinal region, or either of the fractures, would produce traumatic fever in a typically healthy subject. Does traumatic fever necessarily depend upon septic causes, or an inflammatory condition? Erichsen says that simple traumatic fever is best studied in the class of injuries that this case presents, viz., in simple fractures and severe bruises of the soft parts, and that the exact cause of the fever has not yet been clearly settled. Lucas-Championnière is of opinion that we must look for its cause in the nervous system, and certainly in some cases it is difficult to conceive of any other mode of origin. Hamilton[1] says: "Irritation is the only invariable condition immediately precedent to inflammation; it is the direct and sole cause of many surgical accidents in which the interposition of inflammation cannot always be demonstrated, and of some few in which it plainly does not exist, *e. g.*, nervous shock, tetanus, traumatic fever, and traumatic delirium." We see, therefore, how important is the *rôle* played by irritation in its relations to surgical accidents and maladies. According to Erichsen, "In aseptic wounds and subcutaneous injuries we have three causes which may separately or conjointly produce the condition known as traumatic fever. First, a nervous disturbance, concerning the exact nature of which it is useless to speculate. Secondly, the absorption of the early exudation of a fresh wound. Thirdly, the ferment contained in the serum squeezed from a blood-clot during its contraction." It has been shown experimentally by Billroth and others that fresh aseptic serous discharge from a recent wound if injected into the subcutaneous tissues or vessels of an animal causes febrile disturbance. Gross says that "irritative fever bears the same relation to the nervous system that inflammatory fever, properly so termed, bears to the vascular; *i. e.*, that the fever is characterized in the one case by irritability or excess of sensibility, and in the other by plethora or redundancy of vascular action. Van Buren[2] writes that "reaction merging into fever *means that it is incomplete and halting*. It is important not to fall into the popular error that the reaction has passed beyond the limits of health into the region of 'inflammatory excitement,' and that it requires remedies of a lowering character. The excitement is in truth due to depression of the powers of life." Travers,[3] whose opinions are quoted affirmatively by nearly every writer on this subject, says "that the tumult of the system proceeding from the sympathy of the whole with an injured part, is a state in which reparative action is wholly incompatible. Some cases are followed by inflammation, and, incapable of sustaining it, die in collapse. The fever resulting from injury may be bold inflammatory or may be vacillating; but *irritation*, in my opinion of the term, is not fever under any modification. In irri-

[1] Agnew's Surgery, vol. ii. p. 376.
[2] Diseases of the Nervous System, vol. ii. p. 637.
[3] Lectures on the Principles of Surgery, vol. iii. p. 291.
[4] The Treatment of Wounds, p. 21.
[5] System of Surgery, vol. i. p. 409.

[1] Surgery, vol. iii. p. 19, [2] Loc. cit.
[3] Travers's Constitutional Irritation.

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tation we have no determinate or continued train of actions; it is everything by turns and nothing long: it may coexist with fever and not coincide with it, it may be a cause of fever or a symptom of it, or either may exist alone, as original conditions." These views coincide with Hunter's, who defined irritable habit as "an increased disposition to act without the power to act." The following quotation from Savory[1] on shock, admirably summarizes the essential and well-recognized physiological facts relating to this phase of our inquiry:

"There is no more important subject for inquiry than the relations of action to power in the living body. In the condition of health the balance is uniformly maintained, or at least the supply is equal to the demand. But if from any cause the power of an organ on the function of which life is immediately dependent be much impaired, this difficulty arises: its function must still be discharged to an extent at least sufficient for the purposes of life, and, therefore, deficiency of power may need to be redeemed by increase of action. But action involves exhaustion, and rest is needed for repair. The greater the effort, therefore, the greater the exhaustion; but, again, decreasing power must be met by increasing action. Thus cause and effect react each on the other. The relation between power and action becomes more and more reversed, until at length, the supply diminishing and the demand augmenting, the crisis with rapidly increasing pace is hurried on."

In this way collapse may indirectly terminate in death through excessive and exhausting reaction. Reaction may be for a long time, perhaps some days, only partial and defective, sufficient indeed to protract life, but rendering the prognosis extremely doubtful. Burns's history, as given by Dr. Kiernan, strongly suggests the effects of increasing exhaustion following shock from the undiscovered injuries. He says that Burns was put to bed on the 20th of April, began to fail rapidly on the 22d, rallied on the 25th, and died about noon on the 26th. The death was neither sudden or unexpected. It was not from sudden heart failure, and the conditions found, as described before the coroner's jury, suggest no theory that will sustain the opinion that death was caused by disease. The adhesion and slight thickening of the dura mater has no greater pathological significance than an adherent pleura. The dilatation and fatty degeneration of the right ventricle was not sufficient to involve either loss or embarassment of functional capacity: there was positive proof that there was no valvular incompetency. The slight fatty degeneration of the liver and kidneys was indicated by a slight change in the color of the tissues, and afforded no evidence of preëxisting disease; it was the condition found in a large proportion of the bodies of intemperate subjects. Paget says: "The whole history of fatty degenerations concur to prove that they are results of defect, not of disease of the nutritive processes, and they may be therefore classed with the atrophy which we recognize in merely diminished quantity of formation."

It has been alleged that the well-known tendency to degenerative changes justifies the opinion that the fractures were produced by muscular contraction. Spitzka, one of the most celebrated authorities on the pathology of insanity, refers these trophic disturbances to the conditions found in paretic dementia and chronic paralysis. The line of fracture in the sternum, in this instance, presents in color and cell structure a perfectly normal appearance, and the effusion of blood in the over- and underlying tissues indicated a recent ante-mortem fracture. All experience proves that fracture is very rarely caused by muscular contraction. Gürlt has been able to collect only 133 out of 13,000 cases, in which fracture was so produced. It has also been alleged that Burns was a syphilitic subject; that opinion is sustained only by the existence of a chronic ulcer of twenty years' standing over the left tibia, and the impressions said to have been derived from the appearance of copper-colored patches on the surface of his body. Reference has already been made to the discrepancy of testimony on this point, and as it involves a question of veracity, it will not be further discussed. Whatever view may be entertained, it is evident that syphilis sustained no causal relation to this death, other than possibly contributing with other causes to produce a condition of constitutional debility. The post-mortem findings closely correspond with the physical conditions existing previous to the infliction of the injuries, malnutrition, fatty degeneration, gradual failure of constitutional vigor.

Dr. Moyer makes allusion to the Hetzke case to illustrate the cause and morbid anatomy characteristic of fatal shock. In this case the injuries were "by no means severe, none of them extending through the subcutaneous tissues." The right cavities of the heart were enormously distended with blood, the body was that of a healthy boy absolutely free from organic disease; the opinion that death resulted from the injuries was based upon purely negative evidence, supported by the condition of heart cavities that indicated shock. In comparison with the injuries sustained by Burns, the boy's injuries were trivial. It is well known that youthful subjects are very susceptible to shock, and that they possess great power of resistance; the tendencies are reversed with advancing age, and the dangers are, as is well known, greatly augmented by whatever influence that tends to diminish vital power. Burns's case presents a variety of influences tending to develop susceptibility to shock, and

[1] Loc. cit., vol. i. p. 155.

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all tending to reduce the power to withstand it. Chronic alcoholism, loss of sleep, morbid apprehension of violence, and melancholia combined to produce the degenerative changes described, and a condition of general debility. Chossab, who has made a special study of the progressive structural changes in starvation, says that animals placed on short rations are apt to die from trifling injuries. That has been the experience of surgeons under all circumstances, and it is upon such considerations that surgeons base their prognosis in surgical cases. The question arises as to the propriety of couching opinions in positive terms upon negative evidence as to the causes of death. All injuries of a severe character, not necessarily considered mortal, may prove fatal by reason of the existence of certain morbid tendencies, or constitutional peculiarities, which may be obvious or concealed, and may vary as widely in nature and degree as human character varies. Shall we qualify our opinions as to the cause of death in a case of alleged criminal assault, in which severe and numerous injuries are found to have been sustained, and no evidence found of other adequate causes? Or shall we, admonished by the fact that medical science is only a science of probabilities, permit our conservatism to develop doubts that grant immunity to crime? The answer and the responsibility are alike obvious.

No. 2447 PRAIRIE AVE., CHICAGO, ILL.

ON THE DANGERS ARISING FROM SYPHILIS IN THE PRACTICE OF DENTISTRY.

BY L. DUNCAN BULKLEY, A.M., M.D.,
ATTENDING PHYSICIAN TO THE NEW YORK SKIN AND CANCER HOSPITAL, ETC.

HAPPILY the recorded instances of the communication of syphilis in connection with the practice of dentistry are relatively few in number, when compared with the very numerous cases on record where the disease has been acquired through other innocent channels; for, it must be remarked, the number and variety of modes by which this disease has been innocently spread from one person to another, entirely without sexual transgression, is many times greater than would be supposed or imagined by one who has not investigated or given some attention to the matter.

The subject of the innocent transmission of syphilis is a very large one, and one to which the public health officials might well direct their attention; but at the present time we can consider only a very small and limited subdivision of it, namely, as the disease may in any way bring danger through or to any one in the practice of a single branch or specialty in surgery, namely, in dentistry.

Although, as before stated, the reported instances where syphilis has been communicated in connection with or during the operations of dentistry are relatively few, nevertheless there are a sufficient number of cases on record not only to show clearly that this unfortunate accident has repeatedly occurred and may readily occur, but also to direct our attention to the methods or channels through which this may take place, and so to point out the means by which the danger may be escaped or avoided.

It would be quite out of place here to attempt a full consideration of syphilis as a disease, or even to give a description of its various manifestations and effects, which are more varied and manifold than those of any other known malady. But before entering upon our subject proper it may be well to recapitulate briefly the points which are well established in regard to the nature and pathology of syphilis, in order that the real dangers arising from the disease may be better understood.

Syphilis is no longer to be looked upon with the utter abhorrence with which it has been regarded in times past, when it was believed to be always the result of sexual transgression; it is not, indeed, to be always considered as a venereal disease, for advancing knowledge has revealed and science has recorded thousands of cases where it has been acquired in ways of which the unfortunate victim was as innocent as is one who catches smallpox, scarlatina, or measles; but, of course, the fact still remains that in the enormous majority of instances syphilis is acquired in sexual intercourse, because here is offered the greatest opportunity for abrasions to occur, through which the poison may gain entrance. But, on the other hand, hundreds or even thousands of physicians and midwives have contracted syphilis in the practice of their calling; in numbers of instances it has been conveyed by vaccination, tattooing, cupping, and breast-drawing, and, in fine, there is no end to the curious and previously unexpected methods by means of which this disease has been innocently communicated from one person to another.

This innocent transmission of syphilis has also occasionally happened in the practice of various departments of medicine and surgery. Not only have midwives acquired the disease in the practice of their calling, but several small epidemics are on record where a number of women, and from them their children and others, have acquired syphilis from a chancre on the finger of the woman who had delivered them; the disease has also been communicated in various surgical operations, and a striking illustration is found in the history of Eustachian catheterization, where as many as sixty cases were traced to the practice of one person. Instances will be given later where it has occurred in some of the operations of dentistry.

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Syphilis is a well-defined disease, always depending upon the entrance of a definite, specific poison, which has never been perfectly isolated, and of whose exact nature we know nothing. It is most probably due to a microörganism, but although this has been thought to be discovered on several occasions, it has never been satisfactorily demonstrated, nor have inoculations been made with success by any pure culture of the same. It suffices for our purpose, however, to recognize that there is a poison capable of entering the system and thereby causing syphilis, reproducing itself there, and again under proper conditions communicating the disease to all who are properly and sufficiently exposed to its influence.

The poison always enters the system at some definite point, and at this place generally in from two to four weeks, a local sore, termed a chancre, which is the first sign of the syphilitic invasion, develops. This sore presents quite different appearances under different circumstances and in various localities. These appearances may be learned from many recent text-books and journal articles. The only exception to this mode of entrance of the disease is found in the case of hereditary syphilis, where the poison enters with the life, and possibly in some other rare conditions, which need not be entered upon here.

For the entrance of the syphilitic virus a broken epithelial or epidermal surface is necessary, although apparent exceptions to this rule have been occasionally met. But in some way the poison must come in contact with the absorbing elements of the body, either bloodvessels or lymphatics, and by them be taken into the circulation, where it multiplies and produces its lesions in various parts of the body; and when once the virus has gained entrance the individual is syphilitic, and unless the disease is checked by treatment, it will go on producing its manifestations, even for many years.

The period during which syphilis is actively inoculable has never been definitely determined, and will probably never be accurately known. It is certainly very contagious during the first year, and also for many months thereafter, and cases are on record where infection has occurred from cases many years advanced in syphilis; indeed, the period where danger ceases has never been determined. Although it is questionable if syphilis is often communicated by patients five years after their infection, no prudent man would take even a shadow of a chance of personal inoculation at this or even at a very much later period. Treatment, of course, greatly modifies the infective power of the disease, and the contagious character of syphilis, even in the earlier stages of the disease, is greatly lessened, if not entirely destroyed in some cases. But all these "ifs" and qualifying statements only show what a dangerous and treacherous affection we have to deal with, and how difficult it is always to be certain of immunity from danger.

The poison of syphilis may be received from three different sources: 1st. From the initial sore or chancre; 2d. From mucous patches; 3d. From syphilitic ulceration; and 4th. From the blood; these we will briefly consider in the above order.

The chancre, or initial sore of syphilis, is occasionally formed upon the lips, tongue, and other portions of the buccal cavity, but generally the lesion is so marked and painful that the patient avoids the dentist and there is relatively little danger of infection from this source. But infection does sometimes occur, as in an instance which fell under my own observation, about to be described, where the gentleman, supposing that the chancre was only a local sore due to sharp and rough teeth, went to his own dentist, and had them filed off, when the ulcer was very painful, and giving off an abundant virulently contagious secretion; so that his dentist must certainly have been exposed to the same. It is well, therefore, in the case of doubtful sores about the lips, tongue, or mouth, either to be assured of their harmless nature or to exercise such precautions as will insure perfect protection to self and others, which will be considered later.

The second source of the contagion, namely mucous patches, is far more fruitful of infection, and that against which special care must be exercised. It is to be remembered that at one time or another these lesions appear to a greater or less amount on the buccal mucous membrane of almost every case of syphilis, so that at some time almost every case is capable of communicating the disease from this source. Mucous patches are slightly raw surfaces of various sizes and shapes, which are at first slightly elevated, and then may become depressed by the loss of the epithelial covering. When newly developed they are of a redder color than the normal mucous membrane, but later may become grayish-white. They are always superficial and often do not cause much annoyance, so that the patient may readily attend to all the duties of life, and may go through considerable dental manipulation while having an abundant crop of mucous patches on the tongue, lips, or buccal cavity. The secretion from them is sticky, and intensely contagious. It is from these lesions that fresh chancres are most commonly contracted, and it is this secretion which adhering to instruments and articles such as cups, spoons, pipes, etc., gives rise to syphilis in most unexpected manners.

Certain deeper ulcerations of syphilis may sometimes give rise to contagion, especially when they occur in the earlier stages of the disease; but prac-

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tically very few instances of contagion from this source are known, although this danger also should always be guarded against.

The fourth source of syphilitic infection, namely, the blood, is the least likely to present dangers in connection with dentistry; it is, however, quite possible for blood which is drawn during an operation, or by accident, to communicate syphilis, if by chance it finds an opportunity to enter another individual. It is just this uncertainty in regard to the possibilities of infection which gives to our subject such great practical interest; in few, if any, of the dozens of methods by which the disease has been innocently transmitted from one person to the other was the possibility of such an accident known or even suspected beforehand.

We will now consider some of the observed facts in regard to the communication of syphilis in dentistry, and afterward examine the modes of transmission and the means of prevention. Our clinical study will naturally divide itself into two lines of thought: 1st. In regard to the dangers from syphilis to *patients* undergoing dental operations; and 2d. In regard to dangers to the *operator*.

Inasmuch as it presents many points of interest, relating both to the patient and operator, I may be allowed first to relate the case alluded to which came under my own observation and treatment, and which first called my attention particularly to the subject.

Mr. X. W., a gentleman of intelligence and position, aged sixty years, came to me September 11, 1884, on account of a sore on the tongue which he feared was a cancer. The history was, that some ten weeks before his first visit, he had first noticed a little point of soreness, which had gradually increased in size, in spite of treatment, until latterly it had given him considerable annoyance, so that he was conscious of its presence at all times. The true nature of the sore had evidently not been recognized.

On examination there was found on the right side of the tongue, about an inch from its tip, a hard, inflamed mass, nearly half an inch in diameter, the centre ulcerating and the edges somewhat everted. It was not painful except when irritating food or drink touched it. The two upper molars were found to have sharp and rough edges, and he had been wearing a red rubber plate until recently. There was a small, enlarged, and painful gland beneath the jaw on that side.

Thinking that the ulcer might possibly be due to irritating local causes, he was given a soothing mouthwash, and an alkali internally. Five days later there was a marked improvement in the condition of the ulcer; it had a less angry look, but its edge was more clearly defined as the inflammatory element had somewhat subsided. He had been of his own accord to his regular dentist, and had had the roughened teeth made smooth, and had left out his set of artificial teeth.

From a careful second study of the case I then felt convinced that the sore was a chancre, a primary lesion of syphilis, and he was immediately put on antisyphilitic treatment; the general eruption and other symptoms which followed a few weeks later rendered the diagnosis certain, together with the remarkable manner in which the sore healed and symptoms vanished under proper treatment for syphilis.

In searching for the mode by which the syphilitic poison had gained entrance, it was learned that, during the month or so previous to the appearance of the sore upon the tongue, he had, through the persuasion of a friend, been under the care of a dentist of the cheap, advertising order, who, he had noticed, was not at all cleanly either in his person or with his instruments. He could not locate the exact date of the injury to the tongue by the dentist's instruments, but work had been done in that locality, and he remembered the instrument occasionally slipping, as will often happen, and inflicting injury to the soft parts. He was a married man with a family, and was very desirous of learning how he had become infected; he had certainly not been exposed in sexual intercourse, nor in any other manner which we could discover.

The interesting points in the case are: first, that while the proof is not absolute that he was infected in the dentist's chair, still the circumstantial evidence is so strong that little, if any, doubt can be entertained that the poison came through this channel.

The habits and methods of the particular dentist were such that poisonous material from the mouth of a previous syphilitic patient could readily have been transferred on instruments or otherwise to the wound made in the tongue, either by the sharp teeth or by a slip of an instrument. The second interesting point is that this patient, before the true nature of the disease was ascertained, had been to his own regular dentist for smoothing the teeth, and so had certainly exposed him, and others through him, to the poison which was secreted freely from the raw surface of the chancre.

The earliest recorded cases of the transmission of syphilis in dental operations are in connection with the transplantation of teeth, during the last quarter of the eighteenth century.

Sir William Watson[1] published a case of this description, and John Hunter[2] relates two similar cases, about which there can be no doubt. J. C. Lettsom[3] also recorded three cases: of these, one was personal, one was seen by a Dr. Hamilton, and the third occurred in America, having been observed by Kuhn in Philadelphia; these gentlemen furnished

[1] Watson: 'Transactions College of Surgeons, 1785, iii. p. 328.

[2] Hunter: Treatise on the Venereal Disease, 1st English edition, 1786; 1st American edition, Philadelphia, 1818, p. 362.

[3] Lettsom: Transactions London Medical Society, vol. i., 1787, p. 137.

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notes of the cases to Dr. Lettsom. This mode of transmission does not occur again in literature, to the knowledge of the writer, although Gibier[1] says that "cases have been recently related." In view, however, of a recent revival of the operation of tooth transplantation, it is quite possible that the future may furnish fresh instances of this mode of the innocent acquiring of syphilis.

From this period no other cases of the transmission of syphilis through dental procedures are found recorded for nearly a century; indeed, not until the advent of modern operative dentistry and active medical observation.

The first case met with is one reported by Dr. C. W. Dulles,[2] of Philadelphia, and which was also seen by the late Dr. Maury. The patient, a female domestic, of excellent character, developed a chancre of the lip two weeks after a visit to a dentist, who on that occasion extracted a tooth, and later did some cleansing of the teeth. Although no confirmation was obtained, it seemed reasonable to suppose that the operation of extraction was in some way responsible for the inoculation.

Dr. F. N. Otis[3] also mentions a chancre of the lip which occurred in a gentleman, "about three weeks after a morning spent in a dentist's chair." Lancereaux[4] relates a similar case of chancre of the lower lip in a woman, after extraction of a tooth and other dental work; and Giovanni,[5] of Bologna, has reported a chancre of the lip, apparently from a dentist's instrument. Leloir[6] mentions having seen a man with chancre of the gum, in whom the infection seemed to have taken place in consequence of cleaning and filling a cavity in a tooth with soiled instruments. Lydston[7] has likewise reported the case of a woman with syphilis, in whom the chancre on the gum, below the lower middle incision, appeared to be the result of cleaning and repairing of the teeth, done three weeks previously. The glands beneath the jaw began enlarging a week or more after the appearance of the sore on the gum.

Roddick,[8] of Montreal, has recorded a case of more than usual interest, where the primary syphilitic sore on the gum was undoubtedly the result of inoculation by means of dental forceps used in extracting a tooth. This case is worth mentioning somewhat in detail. The patient, aged about thirty, was the wife of a physician, and the mother of healthy children. She had been in excellent health until about a year previous to her visit, when she had a tooth extracted, the operation being difficult and accompanied by considerable laceration of the gum. The wound showed no tendency to heal, but became sloughy and indurated. Within a few weeks the glands beneath the jaw were found enlarged, and shortly after, an erythematous rash covered the body and extremities, followed later by a papular and squamous eruption. Sore throat and alopecia were soon added, to complete the picture of constitutional syphilis. Careful investigation failed to reveal any other source of contagion than the dental operation; the husband was entirely free from disease, and Dr. Roddick, who is an exceptionally careful man and thoroughly qualified to judge, concluded that "in all probability the instrument used by the dentist was made the vehicle of contagion by being brought in contact with a mucous patch in the mouth of a syphilitic person previously operated upon."

In the second division of this portion of the subject, namely, the dangers from syphilis to the *operator* in dental procedures, the number of instances on record is fewer, but they are very striking and well authenticated.

The first instance discovered was that of a dentist, who reported his own case.[1] The inoculation took place on the middle finger of the left hand, above the nail, and was followed by constitutional syphilis. He could not trace the infection to any particular patient, but there could be no doubt that the poison came from mucous patches in some one's mouth, and lodged in one of the little cracks which are so common about the root of the nail. Bumstead,[2] when speaking of the digital inoculation of accoucheurs, says that he has "known dentists to suffer in the same manner." Neumann[3] knew of a dentist who tore his hand on a sharp tooth while operating on a syphilitic patient, which injury was followed by severe syphilis. Jonathan Hutchinson,[4] in his excellent little clinical work on syphilis, gives an illustration of a well-marked, circular, indurated chancre on the pulp of the finger of a dentist, which had been produced by a scratch on a patient's tooth.

Although the number of these recorded instances of syphilis communicated in dentistry which I have been able to find, after a very careful study of the subject during several years past, is relatively small, it is yet quite sufficient to establish the fact that such infection does occasionally take place, and to place us on our guard against such accidents in the future. Undoubtedly but few of the cases occurring have ever found their way into print, and it is possible

[1] Gibier: Ann. de Dermat. et de Syph., 1882, p. 129.
[2] Medical and Surgical Reporter, January, 1878.
[3] Lectures on Syphilis, New York, 1881, p. 102.
[4] Proceedings Academie de Médecine de Paris, L'Union Médical, 1889, xlviii. p. 655.
[5] Lo Sperimentale, 1889, p. 262.
[6] Leloir: Leçons sur la Syphilis, 1886, p. 62.
[7] Journal of the American Medical Association, 1886, p. 654.
[8] Montreal Medical Journal, August, 1888, p. 93.

[1] Boston Medical and Surgical Journal, vol. lviii. p. 38.
[2] Venereal Diseases, edition of 1879, p. 432.
[3] Neumann: Allgemeine Wiener medizinische Zeitung, 1884, p. 61.
[4] Syphilis, London, 1887, Plate II., Fig. 2, p. 96.

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that when special attention has been called to the subject many more will be recognized and reported.

Having now considered the clinical basis on which rest the grounds for believing that there are dangers arising from syphilis in the practice of dentistry, we will examine the modes in which this accident can arise, and then consider the means for preventing the occurrence of this sad event. Two methods of the non-venereal transmission of syphilitic virus are recognized, namely: First, the direct, and second, the indirect. In the first instance the poison is transferred directly from one individual to another, either in already existing wounds or in those occasioned at the time. The number of recorded cases of the communication of syphilis by kissing is now very great; hundreds can be found in literature, and I myself have seen over thirty cases of chancre of the lips. Infants at the breast of syphilitic nurses frequently acquire the disease, and breast-drawing by adults has given rise to numberless cases. In several series of instances syphilis has been both acquired and given by the application of the tongue to the eye to remove foreign particles and to heal disease; the disease has also been acquired and given in the process of wound-sucking, and other more rare modes of transmission which have been reported could be enumerated did time permit.

The particular method which is, perhaps, of most interest to us in the present connection is that of tooth-wounds. The number of cases of this class which are on record is very great; nearly all of them are from bites, usually intentional, and details of these need not be presented here. There are also a number where the infection has taken place from a blow on the mouth, the knuckles being wounded by the teeth. The first of these tooth-wound cases was observed about the beginning of the present century, by Boyer,[1] but not reported until 1840, by his son. Since that time a number of observers have recorded cases, some of whom have each seen several. Thus, Gamberini[2] saw three cases; C. Pellizzare,[3] three cases; Van Harlingen,[4] five cases; Lavergne and Perin,[5] five cases; Lesage,[6] three cases; Finger,[7] four cases, and Jonathan Hutchinson,[8] three or four cases.

In connection with this may also be mentioned the fact that surgeons have repeatedly been inoculated in wounds acquired during operations on syphilitics, as also in other wounds when examining those with the disease. When we consider the relatively large number of physicians and surgeons who have become thus accidentally inoculated in the discharge of professional duties (and I myself have seen at least seven or eight cases), the only wonder is that the accident does not occur oftener to dentists, whose fingers are continually bathed in the buccal secretions, often from mouths with active and intensely contagious syphilitic lesions.

Syphilis is rarely communicated to the patient in dental operations by the direct or immediate method of contact, although the cases of the communication of syphilis by tooth transplantation, already referred to, were probably by the direct method, the poison being undoubtedly carried directly in the transplanted tooth from a syphilitic to a healthy person.

It would also be possible for a dentist with an unrecognized chancre on the finger, in an early stage, to communicate the poison directly to a patient's mouth, as in the case of midwives, already mentioned; but no such case has been found in literature.

The second, indirect or mediate, method of contagion is that which usually takes place in cases where the disease is transmitted during the operations of dentistry, and, indeed, in a large number of the cases of syphilis innocently acquired.

Time and space would fail to tell of even a few of the methods of mediate contagion of syphilis which are scattered throughout literature, but a brief statement of some of the principal modes by which it has been observed to be conveyed innocently from one person to another, may aid us in understanding how the accident can occur in connection with dental operations.

As is well known, various household utensils, such as cups and drinking vessels, spoons, tobacco pipes, etc., have been the means of spreading the disease to hundreds of cases. The glass-blower's pipe has also caused a number of small epidemics, and cases have been traced to the assayer's blowpipe, to whistles, musical instruments, toys, pencils, pins, tacks, nails, thread, paper money, coin held in the mouth, etc. Of instruments used about the mouth, laryngoscopes and tongue-depressors are peculiarly liable to transmit the disease, but the only instance found is a case reported by Jumon,[1] in which a paper-cutter used to depress the tongue gave rise to syphilis. The cases traced to the use of the Eustachian catheter have been already mentioned.

Syphilis has also been conveyed by means of various fabrics, and a number of striking cases are on record where towels and napkins have transmitted the disease. An interesting case is given by Leloir,[2]

[1] Gazette Médical de Paris: Behren's Syphilidal, 1841, iii. p. 322.
[2] Gamberini: Giov. Ital. d. Mal. Ven., 1878, p. 365.
[3] Pellizzari: Giov. Ital. d. Mal. Ven., 1882.
[4] Van Harlingen: Philadelphia Medical Times, 1884-5, xv. p. 80.
[5] Annales de Dermatologie et de Syphilographie, 1884, 2d series, v. p. 332.
[6] Chancre par Morsure, Thèse de Paris, 1885.
[7] Die Ven. Krankheiten, 1886, p. 14.
[8] Syphilis, London, 1887.

[1] Thèse de Paris, Syph. Ignoiee, 1880.
[2] Leçons sur la Syph., Paris, 1886.

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where syphilis was communicated by means of a handkerchief.

Of peculiar interest are the cases, of which there are a number on record, where the venereal disease has been transmitted by means of a tooth-brush. This was first observed by Blumenbach,[1] where a lady received a chancre of the tonsil, apparently by means of tooth-powder, her syphilitic nephew dipping his brush into her box when cleaning his teeth.

It is understood, of course, in all these instances that the various objects served as media to convey the dried syphilitic secretion which adhered to them directly to the tissues of the individual who became infected, and it is readily seen how, unless precautions are exercised, the various implements and articles used in dentistry may likewise very easily become the bearers of syphilitic virus.

It is not always possible to determine exactly upon which instrument or in what manner the poison is conveyed, but the preceding instances show that the infection did take place in some way in connection with and in consequence of dental operations. The agents which may become the conveyers of the poison are as numerous as the implements and articles which may come in contact with the mouth in dental manipulations. For convenience, these may be grouped in four classes, as follow: First. Instruments proper. Second. Napkins. Third. Rubber dams, wedges, dental floss, etc. Fourth. Plaster, rubber, etc., used in the making of artificial teeth and sets.

Among instruments, the only one plainly shown to have communicated the disease is the forceps, in the case related by Dr. Roddick, in which the site of the extracted tooth, where the gum was torn by the forceps, became a syphilitic ulcer, the seat of the chancre or primary sore of syphilis. But it is readily seen that the instruments used in excavating and plugging may also become infected, while there is peculiar danger in such instruments as files, burrs, and drills, where there are many places difficult of cleansing which may receive and retain the virus. Napkins and towels may convey the poison, as has been shown; while rubber dams, if used a second time, would very easily convey infection from their prolonged contact with the soft parts. The same is true of wedges, portions of one being often used for different patients, as also thread, ribbon, or dental floss passed between the teeth. The different workmen in a furrier's shop were once infected[2] from a thread passed between them and bitten off. My scanty knowledge of the process of taking casts and preparing and fitting artificial teeth does not permit me to speak in regard to any dangers from this, but I should judge that possibly some danger might arise, perhaps, quite as unexpectedly as it has in other branches of dental practice.

We come, finally, to the most practical and important part of our subject, namely, the prophylaxis, or prevention of the occurrence of this most unfortunate accident, the transmission of syphilis in the practice of dentistry. It may be somewhat out of place in the presence of a society composed of the best elements of the dental profession in New York to urge the simple matters of precaution about to be mentioned; but, as some may not heretofore have recognized the immense importance of the matter, it is best to err on the safe side, and to present briefly and clearly the precautions which seem to be indicated from what we know of the nature and virulence of the poison of syphilis.

As before mentioned, the virus or contagious element comes in liquid form from a chancre or a moist, exuding surface, or, more rarely, with the blood itself from a fresh wound. The secretion is very sticky and adherent, and when dried on an article forms a delicate coat which can hardly be perceived. Nothing is known in regard to the viability of the virus, or the length of time during which it may retain its actively contagious character, but from many instances in the various conditions of life and in medical experience, it would seem that under proper circumstances it retained its vitality and activity for some considerable period—longer than that possessed by the somewhat similar virus of vaccine. Days, weeks, or, perhaps, months, after an instrument or article has become infected it may again give off the poison and produce inoculation. Simple washing will not destroy the poison, although it may so dilute it that it becomes innocuous.

There are, however, several elements which are destructive to its life, and these are heat and cold, and the so-called disinfectants, antiseptics, or germicides. Cold can hardly be utilized practically, as a sufficiently low temperature for a sufficient length of time would be difficult to maintain. Heat, however, may readily be employed in a thoroughly efficient manner, and is undoubtedly the very best means for destroying contagious principles. Inasmuch as dry heat, as in a flame, would injure the temper of instruments, the desired results are best reached by means of moist heat, obtained in boiling water.

Instruments and other articles placed in a vessel and then subjected to vigorous boiling for half an hour or so may be considered absolutely free from any power of conveying contagious matter.

Various chemical substances are also capable of destroying the virus when efficiently used; prominent among these stand bichloride of mercury and carbolic acid. The mercurial salt has its disad-

[1] Bibliothek fur Aerzter, iii. p. 197.
[2] Archiv. f. Derm. et Syph., viii. 660.

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vantages, both from its poisonous nature when in strong solution, and also from its corroding action on some metals. Carbolic acid, therefore, remains as the best of the two, and, indeed, when properly used, answers all the requirements of the case. But one must not be deceived by the odor, and be led to use a weak solution, for it is questionable how serviceable the high dilutions used in antiseptic surgery are in overcoming such a poison as syphilis. The strong acid certainly destroys it, and a safe method is to dip the instruments in a ninety-five per cent. solution, wiping or scrubbing them afterward. A much weaker strength, even a ten per cent. solution, would probably be effective if they were left in it a considerable time, and then thoroughly washed. I will not take the time to discuss other disinfectants, but I wish to impress the fact that, not only for ordinary cleanliness, but also and particularly to avoid the possible danger of infection, too great care can hardly be used in rendering instruments and everything pertaining to dental practice as absolutely clean as thought and labor can possibly make them.

Files and burrs are particularly liable to catch and hold the poison of syphilis in their fine serrations, and as they are also peculiarly liable to wound the soft parts, they may readily become means of contagion. Also, the various articles connected with polishing the teeth are dangerous if not properly cared for. I well remember more than one dentist, in times past, polishing my own teeth with a bit of wood dipped in pulverized pumice-stone, which wood had evidently been used for former patients. Rubber dams and wedges can of course be readily disinfected in strong carbolic solutions, and napkins by boiling.

In regard to the personal prophylaxis of the dentist against acquiring syphilis in dentistry little need be said. The careful guarding of fresh wounds, and thorough cleansing of the hands, and immediate sucking of any wound made during operations, will generally suffice to prevent the untoward event. "Forewarned, forearmed," applies well in regard to all the dangers from syphilis in dentistry; if the danger is thoroughly well known and appreciated half the battle is over.

The question here arises, how far the dentist should be able to recognize syphilis and avoid its dangers. Undoubtedly, it would be most desirable that this knowledge should be obtained; but unfortunately a practical acquaintance with syphilis is somewhat difficult, except after considerable clinical experience with the disease. But it is certainly extremely desirable that the mouth lesions should be known by dentists so as to be recognized, and this would be a fitting subject for the consideration of instructors in dental colleges.

In concluding our discussion of this topic, I would add that I by no means wish to excite unnecessary alarm, but only to present facts already well known and conclusions which must be accepted by all those acquainted with the subject. With the presence of such a disease among us, which often appears even in the best class of society, it is well to recognize and understand the dangers which may arise therefrom, and to do our utmost to avert them; this I trust will be the result of the presentation of the subject which has been considered.

MEDICAL PROGRESS.

Inhalation of Vaporized Calomel in Croup.—Rothe reports the case of a child (*Der Kinder-Arzt*, March, 1890) suffering from true croup, in which the symptoms were so severe that the necessity for tracheotomy was imminent. Before resorting to the operation, however, he decided to try the efficacy of inhalations of vaporized calomel, as described by Corbin. A tent over the bed was improvised by means of half-hoops and a blanket, and at the feet of the child a dish and spirit-lamp were placed, and in the dish 30 grains of calomel. The calomel was quickly vaporized, and in about eight minutes the noisy respiration of the patient became quieter and less labored. In ten minutes a profuse perspiration was induced and the child was quiet and comfortable, and without dyspnœa. On the next day the symptoms again increased, and the same treatment was resorted to with equal success. On the fourth day the child was convalescent.

In the second case, a child of seven years, the treatment was also successful. In both cases after the inhalations expectoration became free and less tenacious than previously, but in neither was the membrane discharged.

Early Symptoms of General Paralysis of the Insane.—In a paper read before the Harveian Society (*British Medical Journal*, April 5, 1890), Dr. George H. Savage described premonitory symptoms of general paralysis which are not usually noted in the text-books. Of particular interest are the following:

1. Fatigue after slight exertion is often the earliest symptom noticed by the patient, and is a valuable sign if noticed in connection with other suspicious symptoms.

2. Temporary aphasia is by no means uncommon as an early sign, but it must be understood that transient attacks of aphasia without apparent cause are not always followed by general paralysis. Closely related to this sign is a change in the handwriting; some patients alter their mode of holding the pen or cease writing altogether a year or more before the disease is distinct.

3. Sudden and slight attacks of loss of power or sensation, causing a man to drop whatever he may have in his hand are frequent.

4. Neuralgia, headache, and rheumatic pains almost invariably occur a year or more before the disease declares itself.

5. Changes of temper and character are probably the

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most constant of all the changes which are noticed early in the disease.

The paper concludes with the advice that in a patient with a history of syphilis or of injury to the brain, do not neglect early fatigue, fainting or other fits, loss of smell, vague optic disk changes, unusual headaches, neuralgia and sciatica, and change of character.

General Treatment of Bright's Disease.—In the treatment of Bright's disease SENATOR advises the patient to seek a dry and equable climate, and to live almost exclusively upon a milk diet. Small amounts of white meats may be taken, but no red meats. Such vegetable food as herbs, cereals, and fruits are permissible, but it is important to avoid spices. Wines diluted one-half with water may occasionally be taken.

BAMBERGER insists on an exclusive milk diet, and uses the following ferruginous pills:

℞.—Chloride of iron . . . 3 grains.
Extract of taraxacum, sufficient quantity.—M.

One such pill to be taken three times daily.

Or,

℞.—Sulphate of iron
Bicarbonate of sodium } of each 75 grains.—M.
Extract of taraxacum

Make into sixty pills, of which three should be taken in the morning and three at night.

SEMMOLA also insists on a diet of milk, and gives the following mixture:

℞.—Iodide of potassium . . 15 grains.
Phosphate of sodium . . 30 "
Chloride of sodium . . 1 drachm.
Water . . . . 3 ounces.—M.

To be taken in twenty-four hours.—*L'Abeille Médicale*, March 31, 1890.

Sodium Salicylate for Biliary Colic.—PROFESSOR STILLER, of Buda-Pesth (*Wiener medizinische Blätter*), calls attention to the remarkable cholagogue effects of sodium salicylate and suggests that on this property its efficiency in rheumatism may depend. For five years Stiller has used the drug to assist in the expulsion of gall-stones and with most excellent results, not only in securing the primary object of treatment, but in quickly relieving the accompanying pain. He believes that the salicylate increases the quantity and decreases the consistence of the bile, the slowly increasing pressure dilating the ducts.—*Provincial Medical Journal*, April 1, 1890.

Dangers of Catheterization in Retention of Urine.—DR. ASSMUTH (*St. Petersburger medicinische Wochenschrift*) calls attention to the dangers of catheterization in certain forms of retention. The dictum that in old persons with overfilled bladders catheterization should not be resorted to, as a rule, is laid down, and still more imperatively should this be insisted upon where the tension upon the bladder has occurred gradually, perhaps occupying years in reaching this condition. The author's experience, as shown by cases occurring in his own practice, convinces him of the disadvantages of the use of the catheter under these circumstances. Suddenly produced changes of intra-vesical pressure bring about a disastrous issue through rapid urinary resorption. He advises that catheterization be employed only when acute retention supervenes; otherwise the interference should be restricted to the occasional introduction into the bladder of a full-sized metallic sound. This procedure proves useful in retention depending upon different causes, such as prostatic hypertrophy, paraplegia, etc. Patients learn, in the course of time, to urinate voluntarily, the urine approaches its normal condition, and the irritability of the viscus is markedly lessened. Only after a long persistence of the treatment by the sound, and further treatment being deemed necessary, should the catheter come into play; and even then the urine should not be fully evacuated until after many sittings, at the same time partially replacing the withdrawn urine by means of fluid.—*Annals of Surgery*, April, 1890.

Salol in the Treatment of Gonorrhœa.—For some time MR. J. ERNEST LANE (*Lancet*, March 22, 1890) has been testing the value of salol in all stages of gonorrhœa, in some cases relying solely upon its use, in others employing an astringent injection in addition. An analysis of the fifty cases treated shows that six were cured, twenty-four showed considerable improvement, in fifteen cases no change either for better or worse was noticed, while in five cases the symptoms were aggravated. The doses used were from five up to thirty grains, taken three times daily. The beneficial effects of salol manifest themselves in a very short time. When improvement takes place the symptoms show an abatement in from two to seven days; in acute cases the painful micturition is soon alleviated; in cases of a more chronic nature the discharge is materially lessened. In ten cases injections were employed in conjunction with salol; but he subsequently increased the dose of salol to ten, twenty, and in a few cases to thirty grains, and relied upon its internal administration without the assistance of injections. Out of forty cases so treated, an improvement was noticed in twenty within a week, while six were completely cured. Four hours after administration by the mouth of twenty grains of salol traces of carbolic and distinct evidence of salicylic acids, combined with other elements, were found in the urine. In one case the urine was blackened as in carboluria, the patient at that time taking thirty grains three times a day. It is said to be by the action of the pancreatic juice that salol is split up into carbolic and salicylic acids; of this change he was unable to procure any evidence, after having added pancreatin to a mixture of salol. In salol we have, in his opinion, a drug of considerable value in the treatment of gonorrhœa; its effect is apparently produced by the action of the urine upon the inflamed urethra, since that fluid contains salicylic and carbolic acids in combination, probably as salicylurates and sulphocarbolates. It may be given in doses of from ten to twenty grains three times daily at any stage of the disease, and in chronic cases an astringent injection will materially hasten the cure. The effect of the drug does not appear to be enhanced by larger doses than twenty grains; when the amount was increased to thirty grains, the urine became blackened and the symptoms did not show any proportionate improvement. He commenced by giving five-grain doses, but this was soon discovered to be too small a quantity.

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THE TREATMENT OF DISEASES OF THE UTERINE APPENDAGES.

THE universal law that action and reaction are equal finds frequent illustration in the swinging of the pendulum of medical opinion; active interference with and the removal of various organs of the human body are often followed by the establishment of some conservative method of treatment for the diseases of the organs in question. The zeal for laparotomy and extirpation of the uterine appendages has already passed its highest point, and is giving place to a less radical and more rational belief. The absurdity of invariably opening the abdomen has frequently been demonstrated by fruitless operations and by extraordinary mistakes in diagnosis.

Thus, a patient was very recently admitted to one of our hospitals with a history that while in early pregnancy the abdomen had been opened for the removal of a tumor; this tumor she now had with her, aged ten months, healthy and well developed, it being nothing less than the child which accompanied her. Fortunately, no harm was done by the laparotomy, and pregnancy was not interrupted; but certainly a more conservative method would in time have relieved the patient more safely and agreeably of her tumor.

A further illustration of excessive zeal resulting in imperfect and crude diagnosis is found in the case of a woman in whom double pyosalpinx was diagnosed by a laparotomist, and the fearful dangers to which the woman was exposed by reason of this condition were graphically portrayed. Falling into the hands of the hospital physicians to whom she was assigned, an examination of the patient revealed the fact that she was syphilitic, and that the pelvic tissues were infiltrated by syphilitic deposits; the patient was kept clean, put to bed, and treated by antisyphilitic medication, with the result of causing the alleged pyosalpinx to disappear. This case may represent some of the absurdities of the belief that laparotomy is the only reliable diagnostic means in disease of the uterine appendages.

An article by TRIPIER (*Bulletin Général de Thérapeutique*, March 30, 1890) describes a recent manual of gynecology by a French author, in which the anatomical description, the pathology, and operative procedures were most admirable, but in marked contrast with the therapeutics, which displayed a most lamentable paucity. After reviewing the various theories as to the origin of pelvic diseases in woman, Tripier describes his own success in the electrical treatment of congestions, inflammations, neuralgias, and defective development in the pelvic organs. His views represent those of a considerable number of gynecologists who are quite convinced that laparotomy and extirpation are not the panacea which they have been alleged to be, and that general and special therapeutics must be applied to the successful treatment of these cases, although it is true that electricians have undoubtedly been extravagant in their claims for success. It is an open question whether fibroid tumors of the uterus can be dissipated by electricity; that hæmorrhage from such tumors can be checked by the positive pole of an electric current is undoubted, and that pain can be relieved and the growth of such tumors often checked seem also true; but the danger of suppuration which not infrequently follows the attempt to dissipate uterine fibroids is so great as to throw doubt upon the value of this method. It does not seem rational to suppose for a moment that ovarian or tubal abscesses can be cured by electricity, especially when such abscesses follow specific infection, but that a simple salpingitis, or possibly hydrosalpinx, can be cured by this means there seems reason to believe, while chronic congestion about the uterus, defective uterine involution, pain referred to the pelvic organs, failure of proper development,

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and exudates, the result of former inflammation, can undoubtedly be greatly benefited and in many cases cured by general therapeutics directed to the patient's general condition, and by electricity, douches, alterative applications, tampons, and the judicious employment of pessaries.

The somewhat remarkable statement that "the laparotomy craze is about over," was recently ascribed to a most radical laparotomist; but if such be the case, it is certainly a most hopeful condition of affairs. The fact that the statement was accompanied by the organization of a scheme for more extensive advertising to secure laparotomies from abroad gives credence to the belief that men of good judgment have ceased to be led away by the operative furor, and are recognizing the fact that it is the duty of every physician to give his patient the benefit of a careful study of her case, and the application of the science of therapeutics, with its potent resources, before recourse is had to the brilliant, but somewhat uncertain and often dangerous, methods of treatment by surgical interference.

"A WOLF IN SHEEP'S CLOTHING" AGAIN.

SOME months since we took occasion to criticise the business methods of a firm of opticians in this city who, for a number of years, have held an enviable position in regard to their relations to the medical profession.

Not content with having issued a circular in the early winter months, which was distinctly adverse to the welfare of the medical profession and themselves, they have but recently sent out "A Card to Physicians," in which they virtually offer to provide a thorough course of ophthalmology to any physician who may so distrust his fellows in the profession as not to be willing to receive their instruction, preferring that of the money-seeking optician.

While business push should always be coupled with business foresight, the medical profession of this city cannot but be amused at the methods to which certain persons are apparently forced to resort for the development of trade.

Perhaps before long they will provide hospital accommodations and courses in operative methods, unless they regard glasses as a universal panacea. If this same form of mental aberration extends to other trades connected with the medical profession, we may expect to have a truss-maker's school of herniotomy, or a gynecological clinic for teaching the proper fixation of pessaries or the employment of vaginal specula.

ELECTRICAL EXECUTION.

WE publish below an interesting letter from PROFESSOR J. WILLIAM WHITE on electrical executions. The fact that he has for so many years had ample opportunity to study the criminal classes renders his opinions worthy of careful attention. Execution of the death penalty by means of electricity is at present becoming more and more looked upon as the proper method of punishing the crime of murder, and this contribution will do much toward increasing the confidence in the propriety of the new method.

CORRESPONDENCE.

ELECTRICAL EXECUTION.

To the Editor of THE MEDICAL NEWS,

SIR: In reply to your polite request for my views in regard to the policy and method of the approaching execution under the present New York law governing capital punishment, substituting electricity for hanging, I send you a sketch of the line of argument which seems to me and to others who are for one reason or another interested in the criminal classes, to justify the present most important attempt to improve our methods.

In his essay on "Murder, Considered as One of the Fine Arts," De Quincey quotes the following sentence from Lactantius, named by St. Jerome "the Christian Cicero," famous at once for his piety and his polished eloquence: "If merely to be present at a murder fastens on a man the character of an accomplice; if barely to be a spectator involves us at once in one common guilt with the perpetrator, it follows of necessity that in these murders of the amphitheatre, the hand which inflicts the fatal blow is not more deeply imbued in blood than his who sits and looks on." Although he wrote of the gladiatorial contests of the courts of Diocletian and Constantine, and of the custom of giving criminals a mock chance for their lives while really dooming them to a barbarous and bloody death in the arena, his words apply with equal force to the highly civilized communities who have almost within the century witnessed the enforcement of inhuman and revolting death penalties with indifference or approbation. If those who sat idly on the benches at Rome or Byzantium were not guiltless of the crimes they saw enacted, were sharers in the guilt of unnecessary cruelty and barbarity, none the less are the intelligent and law-abiding peoples of the world to-day participants in whatever of injustice or inhumanity is enacted under the guise of law. The Anglo-Saxon race, in this country and the empire of Great Britain, is annually removing from its midst, extirpating, putting out of the world under the forms of law, several hundreds —possibly thousands—of its individual members. Admitting that it is justified in doing so by the necessity of establishing and upholding the public safety and welfare,

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is the manner in which this public duty is performed all that could be desired from the standpoint of ordinary humanity? This question, which should be considered without sentimentalism, involves the determination of the most desirable (or least objectionable) form of execution, a subject which has of late years been of increasing interest to the intelligent public, and which, as time goes on, gains rather than loses in both practical importance and moral and humanitarian significance.

The rational discussion of the methods of capital punishment is, however, inseparable from a consideration of the objects of that punishment, as it is a case in which the end must justify the means. It is, perhaps, safe to say that from the time, not yet one hundred years ago, when, in such highly civilized countries as France and England, there were respectively one hundred and fifteen and one hundred and sixty offences punishable by death, down to the present day, the object of the death penalty in the eyes of legislators and lawgivers has been twofold: First, to protect society from the ravages of particular individuals, and, second, through them, to exercise a deterrent influence upon others of their class. Now, although the increased appreciation of the value and sanctity of human life prevents us from putting to death persons guilty of "heretical preaching" or of "carrying more gold or silver out of the country than is necessary for the voyage," or of "printing, selling, or circulating books without permission granted," offences still extant among us, the object of judicial executions remains the same and does not now, as it did not then, theoretically, include the idea of revenge. The most earnest advocate of capital punishment would probably be satisfied with the death of the individual in as speedy and painless a manner as possible if it were not for the thought of the second object aimed at—the deterrent influence upon the crime class.

The description which Sir Walter Scott gives in "The Heart of Midlothian" of the methods of execution in Edinburgh, recalls to the readers of *Waverley* the fact that until the beginning of the present century the criminals who were executed in Edinburgh were hanged in public at the eastern end of the Grass-market, to which place they were walked through public streets dressed in the shrouds in which they were to be buried, and were finally made to ascend a ladder to a considerable height to reach the platform on which the execution took place. Scott says, "This mode of execution is now (1830) exchanged for one similar to that in front of Newgate—with what beneficial effect is uncertain. The mental suffering of the convict is indeed shortened. He no longer stalks between the attendant clergymen, dressed in his grave-clothes, through a considerable part of the city, looking like a moving and walking corpse, while yet an inhabitant of this world; but as the ultimate purpose of punishment has in view the prevention of crimes, it may at least be doubted whether in abridging the melancholy ceremony, we have not in part diminished that appalling effect upon the spectators which is the useful end of all such inflictions, and in consideration of which alone, unless in very particular cases, capital sentences can be altogether justified."

It is probable, however, that this influence is more imaginary than real. In so far as it is supposed to affect the sensibilities of the habitual criminal, or arouse him to a realization of the enormity of his deeds, or awaken within him the feeling of remorse, I am convinced that it is a total failure. In 1875, when physician to the Eastern State Penitentiary of Pennsylvania, I endeavored to secure evidence in this direction by recording conversations which I held with some of the inmates convicted of the gravest crimes, in reference to their motives in committing those crimes and to their subsequent feelings.

Almost without exception the tone of their replies was unrepentant, or even jocular; so that, for example, a man who had knocked down his unoffending wife and kicked her in the stomach until she died, could laugh in talking about it, and say he "guessed she was better off." Within a few days I have repeated this experience in a number of instances. One example of many must suffice.

A man undergoing a heavy sentence for a murder of unexampled atrocity, surrounded by the most shocking circumstances, was asked if the thought of the crime never troubled him. I found that he never thinks of it at all, except when he takes his bath; then he sees the scar of a wound made by an accomplice, with whom he said he was determined to "get even" when he goes out, many years hence. An educated Englishman, who, for some commercial crime, served his time in Newgate, Millbank, and Dartmouth, and who has recorded his experience in an instructive work called *Five Years' Penal Servitude*, says of some of his fellow-convicts that they were "brutes in mind and demons in heart—irreclaimable, and not at all amenable to any ordinary moral influence. As a rule, they are as cowardly as they are brutal, their criminal instincts and propensities predominating to the almost total exclusion of any intellectual or human feeling." No one was more familiar with this fact and this class of criminals (found in larger proportions, it is said, among the roughs of London than elsewhere in the civilized world) than was Dickens, and in his last book—*Edwin Drood*—he calls attention to "the criminal intellect which its own professed students perpetually misread, because they persist in trying to reconcile it with the average intellect of average men, instead of identifying it as a horrible wonder apart."

Any one unfamiliar with the criminal character who doubts this frequent and truly remarkable absence of remorse, will probably be convinced by reading carefully the records of great prisons, or lives of great malefactors,[1] and will, I am sure, if they read understandingly, be convinced as to the absence of the moral sense in many criminals in whom, as Dr. Oliver Wendell Holmes has said in an article on "Crime and Automatism," "Nothing stands in the way of the selfish motive which leads to crime, except some stronger selfish motive."

[1] To those who may be inclined to take an interest in the general subject of the peculiarities of the crime class, I must recommend a perusal of the following works as introductory to the question, and as most interesting in themselves: Old Bailey Experience; Chronicles of Newgate; Lives of Celebrated Criminals; Crime, by Frederick Hill; Inspectors of Prisons. The Reports of the Eastern Penitentiary, written chiefly by my distinguished townsman, Hon. Richard Vaux, contain a mine of information upon the same subject. I should also include the work recently published by Inspector Byrnes, of New York, on the professional criminals of this country.

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Julian Hawthorne has cleverly described the same peculiarity of habitual criminals (doubtless communicated to him by Mr. Byrnes) through the conversation of an imaginary journalist in one of his recent novels.

Col. Sir Edmund Du Cane, Inspector General of Prisons of Great Britain, records (*The Punishment and Prevention of Crime*) a quotation from an intercepted letter from a convict in Western Australia (where there is a law making a murderous assault on a warden a capital offence) to a friend at home: "They top [hang] a cove out here for slogging a bloke. That bit of rope, dear Jack, is a great check on a man's temper." That graphically indicates about the maximum deterrent influence of any form of execution.

The members of the crime class calculate shrewdly the chances of conviction and punishment; feeling little or no remorse, their only fear is of the law, and they are quite clever enough to know that in proportion to the horrible or revolting character of a death penalty the difficulty of a conviction under a jury system increases. Through my connection with the Eastern Penitentiary as physician, in 1874, 1875, 1876, and of late years as Inspector, I have known, or known of, many of the worst criminals of America, and I feel sure that if they and their associates could be polled they would vote for hanging in preference to any more humane method of execution, as they would for drawing, quartering, and disembowelling in preference to hanging. Punishment is effective with them as a deterrent influence in proportion to its certainty—not to its severity. Hazlitt, who for controversial purposes, questioned the truth of this maxim, practically admitted it later when he wrote: "When a moderate punishment is strictly and vigorously enforced, and a severe punishment is as generally and systematically evaded, the mind will undoubtedly be more affected by what it considers as a serious reality than by what it will regard as an idle threat." Unnecessary brutality as to the form of execution is in its effect upon juries or upon those entrusted with the exercise of the pardoning power precisely similar to unnecessary severity in the apportionment of the punishment to the crime. The Mikado's song expresses a principle of criminal jurisprudence which cannot be ignored without defeat of the very object of the law. The inherent sense of justice and right prevailing in all large communities will not permit them, when, as in modern times, they have power and freedom, to acquiesce in the workings of an inhuman statute. In the reign of Henry VIII. it is said 72,000 persons, or 2000 *per annum*, were executed. In England, from 1813 to 1833, 23,700 persons were convicted of capital crimes, of which number 933, or only about 1 in 25 were executed. Nothing could be more evil in its effect upon the crime class than the existence and practical nullification of such laws. Their glaring injustice doubtless led Dr. Benjamin Rush, in a memorial written in 1792, to protest against "the killing of one kind of murderer, while allowing the escape of quack doctors and a licentious press, who often destroy life and frequently with malice of a most prepense nature." A half century later Mr. Sharswood asserted that, on account of the death penalty and of its manner of execution, 'no crime was so likely to escape with impunity in Pennsylvania' as that of deliberate and wilful murder."

The New York Commission to Investigate and Report the Most Humane and Practical Method of Carrying into Effect the Sentence of Death in Capital Cases, in its report published some time since, expressed the following views on these points:

(1) That the effort to diminish the increase of crime by the indiscriminate application of capital punishment to various offences, involving different grades of moral turpitude, or, in other words, by the enlarging of the number of offences to which capital punishment is made applicable, has proved a failure.

(2) That any undue or peculiar severity in the mode of inflicting the death penalty neither operates to lessen the occurrence of the offence, nor to produce a deterrent effect.

If the above premises are sound, and if in addition those who believe in capital punishment recognize the policy of not needlessly furnishing arguments either to humanitarian agitators of the question or to the counsel for defendants in murder cases, the discussion of the preferable method of execution can be approached with the well-defined idea that the object aimed at is an instantaneous death without pain and without the possibility of shocking or repulsive circumstances of any description. The conclusions of the Commission quoted above will afford an excellent basis for the consideration of this part of the subject. They were as follows:

(1) That the present method of inflicting the death penalty be abolished, and, as a substitute, that a current of electricity, of sufficient intensity to destroy life instantaneously, be passed through the body of the convict.

(2) That every such execution take place in a State prison, to be designated by the court in its judgment and death warrant, and that the time of the execution be not fixed by the court, except by designating a period within which it must take place.

(3) That immediately after the execution a post-mortem examination of the body be made by the physicians present, and the remains be handed over to the medical profession for further dissection, or be buried without ceremony in the prison cemetery or graveyard, with sufficient quicklime to insure their immediate consumption.

(4) That the public accounts of the execution be limited as regards to details.

These admirable suggestions will appeal the more strongly to both reason and sentiment after a brief consideration of the physiology of hanging.

The principal modes of death by hanging as shown by autopsies are: 1st. Suffocation from pressure on the windpipe producing complete obstruction to respiration; 2d. Dislocation or fracture of the spinal column with consequent injury to the spinal cord. 3d. Congestion of the heart or apoplexy from the arrest of the return of blood from the head to the heart, the result of compression of the great bloodvessels of the neck. 4th. Injury inflicted by violent and prolonged pressure on the important nerves of the neck. The proportion in which these results follow hanging are variously estimated, but, as a rule, the conditions are more or less mixed. The amount of pain and distress excited by them must also vary considerably, but is probably inversely proportionate to the completeness and severity of the injury. Total obstruction of respiration, complete dislocations or fractures of the neck, extensive apoplexies doubtless cause painless and rapid death, but if the rope is above or upon

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instead of below the larynx (as in suicidal hanging it was found to be in 140 out of 143 cases) suffocation is probably slow, and attended with the preliminary agony of a hopeless and helpless struggle for life. After asphyxia has begun the testimony is unvarying as to its painless character. Such testimony, of course, consists of the evidence of persons who have been resuscitated after apparent death from suffocation. The celebrated case of Hornshaw, who gave public exhibitions of so-called "hanging" in London, suspending himself by the neck, is in point. He became unconscious on three occasions, and was with difficulty resuscitated. On the last occasion, he says that, although he very soon lost his senses, he passed through a period during which he felt as if some great weight was attached to his feet, and he had the desire without the ability to take a breath—surely one of the most distressing sensations of which human beings are capable. Numerous similar descriptions are found in the records of unsuccessful hangings dating back as far as 1705, when one Smith, who was resuscitated, used almost the same expressions in recounting his experience. Captain Marryatt, the novelist, who was one resuscitated after apparent death from drowning, describes his feelings as rather pleasant, speaking of the sensation as similar to that of lying down in a green field, with the grass waving, the sun shining, etc.

It is usually assumed, I think, that if total and immediate obstruction to breathing could be assured in every case, hanging would be a reasonably humane method of execution. After all, however, this is mere conjecture. Our evidence upon the point is naturally limited, and when we further assert that the writhings and convulsions, which sometimes last for many minutes, during which time the heart continues to beat, and resuscitation is often possible, are merely reflex, and are not attended with sensation, our assertion, even if probably true, is not demonstrably so. The questions propounded by a writer in the *North American Review* are difficult to answer: "Who knows the last agony of the death struggle? Who knows its real duration in the opinion of him who is the last judge? Who can understand strangulation? Who knows through what a universe of misery flashes or struggles the soul of the sufferer?"

A further difficulty in approving this form of execution lies in the circumstances practically surrounding the operation as performed at this day in all parts of the United States and Great Britain; the clumsiness or nervousness of the officials, the occasional struggles of the condemned, the imperfections of the apparatus, etc. As the same writer has put it: "Some people are much better hanged than others. There must be as much difference between good and bad hanging as between entirely distinct ways of inflicting the death penalty." It is highly probable that in the majority of cases comparatively slow and painful suffocation occurs from a combination of these factors. As to the other causes of death the same remarks apply, even more forcibly. Dislocation of the neck was found by Devergie only once in 52 cases, and Taylor says that to secure it the body must be heavy, the fall sudden and long, and considerable violence used by the executioner—*i. e.*, by giving the body of the criminal a violent twist or rotatory movement the moment it is turned off. Apoplexy occurred only 9 times in 85 cases, and death by injury to the nerves of the neck—a rare circumstance, fortunately—must be exceptionally painful. We probably hear the whole truth in relation to comparatively few of the bungled and mismanaged hangings, attended with the greatest agony, and most disgusting in their details, as the information would naturally be suppressed by those chiefly concerned, and who may have been actuated by a proper spirit, but ignorant of proper methods. Certainly, although we have improved upon the executions of our forefathers, when hanging was originally only a means of deadening sensation preparatory to drawing, quartering, burning with hot irons, etc., and when criminals on the way to the scaffold were exposed for hours to the hoots and peltings of a merciless mob, we still have much to hope for in the way of improvement. When guillotining was made the law of France in 1792 by the act of the Assembly, who, in adopting the celebrated law *Tout condamné a mort aura la tête tranchée*, provided that the cutting off should be by means of a "simple mechanism," it was regarded as a humanitarian step, and was indeed a vast improvement upon the decapitation by means of an axe in the hands of an ignorant, often a drunken or crazy, executioner.

The gallows of those days, both in France and England, a rude structure beneath which the condemned was driven in a cart, which, after the adjustment of the noose was driven away, was surely far behind the guillotine in effectiveness and neatness of action. The famous Louis, perpetual secretary of the Academy of Surgery, and one of the great scientists of the day, approved of the latter and suggested many of its details. It carries with it, however, the revolting element of dismemberment and deformity, and is further complicated by the doubt, as old as the century and originally suggested in 1793 by Sömmering the anatomist, as to whether the severed head may not for a short period retain consciousness and intelligence. The mere suggestion is enough! The question was thought to have been decided in the negative, but has been re-awakened by recent scientific experiments upon decapitated animals and upon criminals. Charcot presented, a few months ago, to the French Academy a record of observations upon the head of a criminal who had been decapitated. The criminal did not blanch (as is naturally usual) when placed in position, and the color of the face retained its life-like appearance for at least a minute. For five seconds a touch of the end of a finger to the globe of the eye brought about a quick closing of the lids. The jaws were firmly closed and could not be opened even by energetic efforts. Brown-Séquard had shown some time ago that by injecting fresh blood into the severed heads of dogs the muscles reacted, the eyes moved, and evidences of sensation were present. Last April similar experiments were made upon the head of the murderer Gamahut, a French criminal who suffered decapitation for his crime. Under the influence of transfused blood the face regained its color, the eyelids opened, and the lips quivered and seemed to be trying to speak. The account reminds one of the picture in the Musée Wiertz in Brussels—"*Penskes et visions d'une Tête coupée*," which, together with the other horrors of that curious collection, leaves an indelible remembrance.

In the face of the evidence as to continuance of sen-

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sibility, though it is far from conclusive, and though the general probability points strongly in the other direction, and in view of the other objections which have been mentioned, guillotining hardly seems the most desirable method of capital punishment.

Garroting, as employed in Spain, is as uncertain as hanging, and even more unpleasant in its details. It is intended to consist of a combination of strangling and fracture or dislocation of the spine, but is clumsy and unreliable. The use of poison by the mouth would often involve a shocking struggle with the prisoner; by hypodermic injection would convert the executioner into a veritable Jack Ketch, who would doubtless feel himself almost as much a murderer as the condemned. Certainly the function would be revolting and almost impossible to a man of intelligence or refinement.[1] Shooting is open to the same objection, *i. e.*, the need of direct personal intervention.

The testimony as to the instantaneous character of deaths from lightning-stroke and, of recent years, from contact with the wires of powerful batteries used for industrial purposes, has led many to believe that in this direction we must look for a satisfactory solution of the problem.

At a meeting of the French Academy of Sciences held last spring a report was made upon some recent studies as to the mode of death by electricity, and it was shown that when the circumstances were favorable—*i. e.*, when the current was sufficiently strong and the resistance to its passage the greatest—death occurred through actual disintegration of the blood, as well as of the nerves and muscular tissue.

The details could most readily be suggested or arranged by electrical experts.[2]

The proceeding could be conducted with the minimum of uncertainty, and the person giving the final touch which completed the connection could do so from a considerable distance, and need not necessarily have seen the prisoner. I believe this is not unimportant, as I feel sure from a single experience that no one of ordinary sensibility can even look upon the most carefully conducted execution under our present laws without either great disturbance of feeling or positive brutalizing results. This must be vastly increased with those who have the unpleasant duty of actually carrying the method into effect.

If, in addition to a change in the mode of execution, there could be added modifications in the law, shortening the time after sentence to which by the efforts of ingenious counsel life could be prolonged, and if, during that time, the prisoner was absolutely sequestrated—was already dead to the external world—we might avoid the exhibitions of hysterical and irrational sympathy, and of mock or maudlin repentance, which are now so common. Then, too, it would be true mercy to the criminal to shorten that time, the horrible tediousness of which with the agonizing changes from hope to despair, and then to hope again, have been so vividly depicted by Victor Hugo in the *Dernier Jour d'un Condamné*, and which must be a thousandfold worse and more unendurable than the physical suffering of even the most inhuman execution.

It is earnestly to be hoped that the technical difficulties which surround the present effort to introduce an improved and scientific method of capital punishment may not be found insurmountable.

Very respectfully,

J. WILLIAM WHITE, M.D.

NEW ORLEANS.

To the Editor of THE MEDICAL NEWS,

SIR: At the recent commencement exercises of Tulane University there were 93 graduates in the medical department; the class that attended the past session being the largest in the history of the medical college, numbering 373 students, principally from the Southern States.

It is a matter of surprise that this excellent institution, that for forty-six years has enjoyed deserved reputation in the South, and that still retains high lecture fees, has not yet instituted a three-years' graded course of medical instruction, and has not enlarged its faculty beyond the old-time number of seven professors. While the faculty recommend a three-years' course, and many students take it, the instruction is not graded. In 1889, a microscopical laboratory was opened, but it proved at once to be inadequate for the class in attendance. It is understood that the faculty have under consideration the importance of enlarging the present laboratory; of opening

[1] The New York Commission in the report above quoted makes the following just criticism of the method by poison: "Various suggestions have been made as to the means of accomplishing such a result. One has been the injection of a violent and sudden poison, such as prussic acid, by means of the hypodermic needle, into the body of the condemned, which is open to the very serious objection that the use of that instrument is so associated with the practice of medicine and as a legitimate means of alleviating human suffering, that it is hardly deemed advisable to urge its application for the purposes of legal executions against the almost unanimous protest of the medical profession."

[2] The Report of the New York Commission as to these points reads as follows: The most certain way to produce death would be to pass the current down the spinal cord from the crown of the head, as by the sudden application of wet surfaces or sponges. The result would be, with a sufficiently strong current of the proper character, a painless extinction of all the faculties; and the current being kept on for a little time, would result in such complete nervous exhaustion as to forbid any possibility of resuscitation by any means whatever. The best appliance in this direction is the one which will perform its work in the shortest space of time and inflict the least amount of suffering upon its victim. This can be accomplished by the use of electricity, and the most suitable apparatus for the purpose is that class of dynamo-electric machinery which employs intermittent currents.

The most effective of these are known as "alternating machines." The passage of the current from these machines through the human body, even by the slightest contact, produces instantaneous death.

That the ordinary electric light current used in these experiments is sufficient to cause instantaneous death of a human being is inferred from the many accidental deaths produced by such means. To witness the effect produced upon the heart in action is a demonstration which cannot be questioned, and offers a positive proof that death produced by a sufficiently powerful electric current is the most rapid and humane produced by any agent at our command; that resuscitation, after the passage of such a current through the body and functional centres of the brain is impossible; that the apparatus to be used should be arranged to permit the current to pass through the centres of function and intelligence in the brain.

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a physiological and pharmacological laboratory; and, possibly, of making a three-year graded course compulsory and increasing the membership of the faculty. This would make the institution second to none. It has no competitor in this city, and the material at Charity Hospital is for its exclusive use.

This latter institution, supported largely in the past by the fees received from the notorious lottery company, treated, during the year 1889, 6445 patients; of whom about two-thirds were white. Notwithstanding the fact that all classes of diseases—those of the tropic as well as of temperate zones—were treated, the mortality was only fourteen per cent., and this would be reduced to eleven per cent. if cases that were fatal within the first twenty-four hours were not included. In the outdoor department, 13,938 patients were treated with an average of six visits each.

There are some peculiar features in the administration of the institution. The internes, instead of being graduates in medicine, are undergraduates; it being alleged that if graduates—that are disqualified for the position because they have the degree of M.D.—were employed, they might leave the hospital for outside practice in the event of an epidemic of yellow fever. The internes are called resident students, are appointed by competitive examination, and may, on passing another examination, be re-appointed for a second year's service.

While ostensibly the nursing is done by Sisters of Charity, actually it is largely performed by recovered patients, who often do this service for months with no remuneration save lodging and food. While, from an economical standpoint, such an arrangement may be satisfactory, it is hardly in the best interests of the patients, and is often a source of annoyance to the staff of visiting physicians and surgeons.

The Polyclinic has just opened its session, which will continue during April and May. It has an excellent faculty of thirteen lecturers, and the attendance is quite large.

The Louisiana State Medical Society will hold its annual meeting at Bâton Rouge on May 13th, but it is feared that the high water will seriously interfere with the attendance at the meeting.

The New Orleans Medical Society has just lost its president, Dr. Davidson, who died at the age of seventy-eight years; having been engaged in active practice for the past fifty-six years. His death was due to pneumonia following influenza.

While the influenza has not been as severe here as it seems to have been in the North, there have been a number of cases.

Dr. Joseph Jones, Surgeon-General of the Confederate Veterans, has addressed a circular to the survivors of the medical corps of the Confederate States Army, requesting data regarding the *personnel* of the corps; obituary notices of deceased members; and titles and copies of all published and unpublished reports relating to hospital work, military surgery, and diseases of armies, camps, hospitals, and prisons. It is his intention to publish the material collected.

The terms of several of the members of the Louisiana Board of Health having ended, the late president, Dr. C. P. Wilkinson, who has carried out Dr. Holt's quarantine policy, retires. He is succeeded by Dr. S. R. Olliphant, who is an able physician, and, as vice-president of the Board during Dr. Holt's administration, is familiar with the best quarantine policy for this State.

The Eye, Ear, Nose, and Throat Free Hospital having treated, during the first four months of its existence, 1542 persons, with 9203 consultations, has concluded that its resources are taxed by persons able to pay, and has called for a conference of the authorities of free dispensaries in the city to devise a means to remedy the abuse. In the future, it will charge a record fee of ten cents for each case.

PARIS.

The Treatment of Sprains. Uræmia. Fatigue as a Predisposing Cause of Infectious Diseases.

To the Editor of THE MEDICAL NEWS,

SIR: At one of his recent clinics at the Hospital Broussais, Dr. Paul Reclus spoke on the treatment of sprains. After having reviewed the methods ordinarily employed, he described his method as applied to a sprained ankle. First, an elastic bandage is applied, extending from the toes up to the middle of the leg, with just sufficient pressure to keep it in place; and the patient is told that if the pressure is at all painful he must remove the bandage. If the sprain is not a severe one the patient may be allowed to move about. Morning and night the bandage is removed, and the joint is immersed in warm water the temperature of which is gradually raised to 122° F., or to as high a point as can be borne. In ten or fifteen minutes the foot is removed and dried, and massage is employed about the ankle for the same length of time, after which the bandage is reapplied. According to Dr. Reclus, this is by far the most rapid and satisfactory method that can be employed for the cure of sprains, and in some cases the result is quite remarkable.

Professor Renaut has communicated an interesting paper upon Bright's disease to the Academy of Medicine, in the course of which he gave his views upon the treatment of uræmia. In the prevention of this condition he follows the usual dietetic rules and, in addition, advises the use of dry cups twice daily, and the occasional application of leeches. During the attack efforts must be made to reduce the congestion of the kidneys. This can be best accomplished by venesection followed by the daily application of leeches until the secretion of urine is again properly established. Leeches, Dr. Renaut thinks, are better than scarification or wet cups. The next indication, according to this observer, is to increase the intra-vascular pressure by the administration of large quantities of fluids—milk or water. If the patient will not swallow water freely, eight ounces may be given by the rectum every two or three hours. Not only is the arterial pressure raised in this manner, but the more or less toxic substances which accumulate in the tissues are rendered more soluble. Finally, almost continuous inhalations of oxygen gas are to be used. The oxygen will act on the nervous system and on interstitial tissue changes which take great part in the destruction of the toxines which are retained in the tissues.

Drs. Charrin and Rogers have been studying the influence of fatigue as predisposing to microbic disease. Rats were used in the experiments, and were kept in

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constant motion for about seven hours daily in a revolving cage. The microbes employed were the bacillus of anthrax and the bacillus of symptomatic carbuncle. The experiments proved beyond a doubt that the animals worn out by exertion were much more susceptible to these diseases than animals which had not been exerting themselves.

NEWS ITEMS.

Confederate States Army Medical Corps.—The following letter, addressed to the survivors of the Medical Corps of the Confederate Army, has been received:

"The surrender of the Army of Northern Virginia, on April 9th, twenty-five years ago, practically ended the struggle for the independence of the Southern States, and during this quarter of a century death has thinned our ranks, and our Corps can now oppose but a broken line in the great struggle against human suffering, disease, and death. S. B. Moore, Surgeon-General of the Confederate Army, is dead. Surgeons L. Guild, A. J. Foard, J. H. Berrien, J. T. Darby, W. A. Carrington, F. A. Ramsey, Samuel Choppin, R. J. Breckinridge, E. N. Covey, E. S. Gilliard, E. A. Llewellen, A. N. Tally, Paul F. Eve, D. F. Manson, Louis D. Ford, Habersham, James Bolton, and a host of other medical officers of the Confederate States Army are dead.

"The Association of the United Confederate Veterans was formed in New Orleans in 1888 with historical, social, and benevolent objects. Our illustrious Commanding General, John B. Gordon, Governor of Georgia, has ordered the United Confederate Veterans to assemble in Chattanooga, Tenn., on July 2, 1890. It is earnestly hoped that every surviving member of the Medical Corps of the Confederate Army will meet with the United Confederate Veterans on this important occasion, and promote, by his presence and his counsels, the sacred interests of the Association. It is of the greatest importance to the future historian, and also to the honor and welfare of the medical profession in the South, that careful records should be furnished the Surgeon-General of the United Confederate Veterans, embracing the following data:

"1. Name, age, nativity, date of commission in the Confederate States Army, nature and length of the service of each and every member of the Medical Corps of the Confederate States Army.

"2. Obituary notices and records of all deceased members.

"3. The titles and copies of all field and hospital reports.

"4. Titles and copies of all published and unpublished reports relating to military surgery and diseases of armies, camps, hospitals, and prisons.

"The object is the collection, classification, preservation, and final publication of all the documents and facts bearing upon the history and labors of the Medical Corps of the Confederate States Army during the Civil War. Everything which relates to this critical period of our national history which shall illustrate the patriotic, self-sacrificing, and scientific labors of the Medical Corps should be industriously collated, filed, and finally published.

"It is believed that invaluable documents are scattered over the land in the hands of survivors of the War which will form material for correct delineation of the Medical History of the Corps which played so important a part in the great historic drama. Death is daily thinning our ranks, while time is laying its heavy hands upon the heads of those whose hair is already whitening with the advance of years and the burden of care.

"No delay, fellow-comrades, should be suffered in the collection and preservation of these precious documents. This task of collection of all documents, cases, and facts relating to the Medical History of the Confederate Army invites the immediate attention and coöperation of his honored comrades and beloved compatriots throughout the South. Respectfully your obedient servant,

"JOSEPH JONES, M.D.,
"Surgeon-General United Confederate Veterans.
"756 WASHINGTON AVENUE, NEW ORLEANS."

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 15 TO APRIL 21, 1890.

LA GARDE, LOUIS A., *Captain and Assistant Surgeon.*—Upon surgeon's certificate of disability, on account of sickness, leave of absence for twenty-three days is granted, in extension of leave of absence for seven days, granted him by Order No. 74, Fort Assiniboine, Montana, with permission to apply to the Adjutant-General of the Army for an extension of one month, on surgeon's certificate of disability.—Par. 4, *S. O. 43, Department of Dakota*, April 14, 1890.

By direction of the Secretary of War, PETER J. A. CLEARY, *Major and Surgeon*, is relieved from duty at Fort Wingate, New Mexico, and will report in person to the commanding officer Mount Vernon Barracks, Alabama, for duty at that station, and by letter to the commanding general Division of the Atlantic.—Par. 6, *S. O. 90, A. G. O., Washington*, April 17, 1890.

By direction of the Secretary of War, WASHINGTON MATTHEWS, *Major and Surgeon*, is relieved from duty in the Surgeon-General's Office, this city, and will report in person to the commanding officer Fort Wingate, New Mexico, for duty at that station.—Par. 6, *S. O. 90, A. G. O., Washington*, April 17, 1890.

By direction of the Acting Secretary of War, so much of Par. 2, S. O. 83, A. G. O., April 9, 1890, from this office, as directs the transfer of WILLIAM STEPHENSON, *Captain and Assistant Surgeon*, from Fort Verde, Arizona Territory, to David's Island, New York, is so amended as to substitute the words "Columbus Barracks, Ohio," in place of David's Island.—Par. 1, *S. O. 89, A. G. O., Washington, D. C.*, April 16, 1890.

MIDDLETON, PASSMORE, *Major and Surgeon* (St. Francis Barracks, Florida).—Is hereby granted leave of absence for two months, on surgeon's certificate of disability.—Par. 1, *S. O. 85, Headquarters Division of the Atlantic*, April 12, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING APRIL 19, 1890.

BEYER, H. G., *Passed Assistant Surgeon.*—Ordered to the U. S. S. "Yantic."

MCCARTY, RUFUS H., *Passed Assistant Surgeon.*—Died April 12, of pneumonia, on the U. S. S. "Yantic," at Key West, Florida.

THE MEDICAL NEWS will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVI. SATURDAY, MAY 3, 1890. NO. 18.

ORIGINAL LECTURES.

DERMOID CYST, COMPLICATED BY A TWISTED PEDICLE AND CONSEQUENT PERITONITIS. OÖPHORECTOMY DURING PREGNANCY FOR HYSTERO-EPILEPSY.

A Clinical Lecture.

BY DANIEL T. NELSON, A.M., M.D.,
PROFESSOR OF CLINICAL GYNECOLOGY IN RUSH MEDICAL COLLEGE, CHICAGO.

GENTLEMEN: I have a specimen to show you of considerable interest, a case of dermoid cyst, which I removed on the last day of November, 1889.

The history of the case is as follows: Mrs. R., puberty at fourteenth year, now fifty-seven years of age. She has carried this tumor for fifty-seven years, for dermoid cysts are born with the patients. She is the mother of two children, one thirty-three years of age, the other twenty-nine, both girls. The first child weighed nine pounds at birth, and the second six pounds. She remained in bed about ten days after each confinement, and nursed both children, which proves that there was no special disturbance during or after her confinements. She has had three attacks of pneumonia, the first attack having occurred before she was married, at which time she was ill five or six months. The second attack occurred in 1864, the patient being ill about a month; the third attack in 1880, when she was in bed ten days. During convalescence from the last attack, while sitting up, she suddenly expectorated three or four ounces of pus, which doubtless came from an abscess which had formed in the lungs as a result of the pneumonia. After this she rapidly recovered. Since these attacks of pneumonia she has had a continuous cough on rising from her bed in the morning and on lying down at night. Whether the cough had anything to do with the final development of this cyst, is a question.

Please notice that the last attack of pneumonia was in 1880. Eight years afterward, June, 1888, she had a slight attack of peritonitis, lasting about three days, and she suffered from soreness for some days after this attack. A second attack of peritonitis occurred in October, 1888. She was then confined to her bed for a week. The third and last attack of peritonitis, which was the most severe of the three, occurred in May, 1889, and was produced by stooping down. She went to bed that night and was obliged to remain there for a month, suffering greatly for some days, and, for a time, her life was despaired of. She was confined to her house two months. During these attacks of peritonitis the bowels were never as much constipated as is usual, and they were readily moved by laxatives.

The woman, I should have said in passing, was well developed, about five feet four inches in height, and weighed 180 pounds. After the last attack of peritonitis she lost in weight. The tumor had been noticed for two or three years, and increased in size very rapidly during the attacks of peritonitis, apparently both from its own enlargement and the enlargement of the abdomen as a result of peritoneal effusion. The effusion gradually subsided, so that when the operation was performed the cyst did not seem to be as large as it had been a month or two before; in other words, the tumor seemed to be decreasing in size. It was found necessary to make an incision (in the median line, of course) ten inches in length. After opening the peritoneum there was very little fluid found in the cavity. The tumor was everywhere completely adherent to the peritoneum, but the adhesions were not strong, and were comparatively easily broken down with the fingers. The intestines and omentum, and everything that was adherent, were broken away from the cyst. So intimately associated were the peritoneal adhesions that at first it seemed almost impossible to remove them, but after it was found that they could be broken down with no difficulty the cyst was easily enucleated from its bed. It had the appearance of an ovarian tumor, white, but, because of the adhesions, not glistening. But on tapping it no fluid passed through the trocar. The trocar was removed, when this greasy or sebaceous material which I now show you began to exude. On making a large enough opening, about a gallon of the material welled out, but no fluid. In ordinary dermoid cysts there is usually a considerable amount of fluid, but in this case, if it had been present, it was taken up by the absorbent vessels after the last attack of peritonitis.

After the tumor was freed from all adhesions, and the sac drawn out of the abdomen, the cause of the three attacks of peritonitis was readily seen. The pedicle was only about the size of an ordinary lead-pencil, and seemed to consist of vessels with a little areolar tissue. The Fallopian tube upon the left side was found, but no ovary. The tube and ovary on the right side were atrophied as after the menopause. I confess that I did not search for the ovary on the left side with extreme carefulness, but I believe that the tumor represented all there was of the left ovary. The pedicle, as you see, was exceedingly small, and an interesting point is that it had been twisted through three complete revolutions. Remember that there were three separate attacks of peritonitis. During each attack there must have been a twist which did not completely obstruct the circulation, but which was sufficient to congest the tumor and set up peritoneal inflammation which, except in the last attack, was of short duration. The third twist seems to have obstructed the circulation to a greater extent. I am not sure that there was any circulation left. You will say, if there was no circulation through the tumor why did it not slough? My answer, and the only explanation I can offer, is, that the inflammatory adhesions had been so intimate through the thousands of minute

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vessels connecting the wall of the cyst with all the surrounding viscera, that nourishment was kept up in that way. You know malignant tumors may gather new sources of vascular supply in this way, and fibroid tumors as they grow take on new life from the adhesions. In such cases the ovaries may be removed, but the tumor will not stop growing, receiving its nourishment from the adhesions which have been formed.

Now, I believe, though I cannot demonstrate it, that the last twist was sufficient to obstruct the circulation completely; and that the tumor did not die simply because it received nourishment from the adhesions. If the tumor had died the woman would have died also.

After the removal of the cyst the abdominal cavity was washed out with pure boiled water, and a glass drainage-tube inserted, and the patient made an uninterrupted recovery. Her highest temperature was 100.2°. Unfortunately she had a very troublesome cystitis on account of the frequent use of the catheter. The cystitis, however, passed away, after a short time, under antiseptic treatment.

I should have said that one of the attacks of peritonitis came on after stepping out of a carriage. Perhaps that was the exciting cause. In one other case it was certainly an exciting cause of the twist. When you have a tumor which seems somewhat movable in the abdomen with a sudden attack of peritonitis coming on after some exertion, as stooping, lifting, getting in or out of a carriage, especially if the patient be corpulent, you should suspect a twist of the pedicle, and if the patient's life is not endangered by the peritonitis, there may be no need of an operation in the midst of it. On the other hand, suppose the patient's life is endangered and you expect that she is not likely to live through the peritonitis, do not wait for her to die and make a post-mortem removal of the tumor, but operate in the midst of the attack of peritonitis, and in such cases the sooner you operate the better. Possibly the patient will recover from three attacks, but do not risk another. After the three attacks in this case there was no possibility of the tumor twisting any more, because it was so firmly adherent. This lesson was taught me some years ago by watching a patient in a hospital with an attack of peritonitis and a large abdominal tumor, upon whom we hoped to operate, but we wanted to get rid of the peritonitis before operating. She never rallied. We allowed her to die.

Post-mortem examination showed a sarcoma of the ovary about eight or ten inches in diameter, entirely movable in the abdomen, and with a twisted pedicle. I believe the tumor might have been removed and the patient's life saved if we had dared to operate.

HYSTERO-EPILEPSY—OÖPHORECTOMY DURING PREGNANCY.

The next patient I present to you has a history which has been most remarkable and is extremely interesting. She is apparently in perfect health to day. She first came to the clinic in October, 1888, and her history as given then was as follows: She was twelve years old at puberty, is now twenty-five, and was born in this country. She has been married six years; has had no children and probably no miscarriages. She has received treatment for five out of the six years of her married life, wearing pessaries, and using tampons, wet and dry, all of which seemed to give her but little relief. She has been in the habit of losing consciousness for five to thirty minutes at a time, and is worse toward night. I might say, before reading her further history, that she is suffering from hystero-epilepsy. The epileptic seizures are more frequent and worse just before the menstrual period and last from five to thirty minutes. She does not froth at the mouth. She feels more comfortable after a sleep. Epileptic patients usually tell the same story. She feels better if left alone, and this is also true of most epileptic patients. The various attempts to bring them to consciousness by rubbing them, dashing water on their faces, pouring various remedies down their throats, is not agreeable to them; it makes them feel worse, they say, than if they were allowed to recover consciousness in their own way.

As a result of these epileptic seizures many patients begin to lose their memory after a time, and this was the case with the patient before you. Her bowels were constipated, appetite variable, she took cold easily, she had difficult breathing on exertion, and suffered from cold hands and feet, and she was exceedingly nervous. Menses were irregular before October, 1888. Sometimes three months would pass without menstruation; in one instance a year. She had a leucorrhœal discharge, usually white, but at times yellow in color, constantly for five years. She could not walk easily, and it gave her great pain to be on her feet.

Local examination found this state of affairs in the pelvis: The left ovary was resting upon the broad ligament, and adherent in that position, prolapsed and tender; the right ovary, also tender, was behind the uterus, where it was being irritated by the latter organ. Uterus sensitive. Pressure upon the uterus, and more particularly on the ovaries, made her feel as though she would have a convulsion, consequently the examination was not as thorough as it otherwise would have been. She had been married six years and had never been pregnant so far as she knew, and I supposed was not likely to be. She suffered from attacks of nausea at the time of the first appearance of the menses, and from shooting pains in both thighs, which were worse in stormy weather. This leads us to suppose that she was a victim of rheumatism also. Abdomen, hands, and feet were swollen; micturition was sometimes free, sometimes difficult, and attended with more or less pain. She had had spasms for two years before coming here. During these spasms her limbs were drawn up and she felt a sense of suffocation. They occurred either at night or early in the morning. This was in October, 1888. She had received a variety of treatment during five years without any apparent benefit, and as her memory was gradually failing and the ovaries were tender, adherent, and so much displaced, it seemed to me to be a case in which the removal of the ovaries was the only treatment that was likely to promise any satisfactory results. The operation was therefore done on November 20, 1888. The menses, you remember, had been irregular for some years, occurring, as stated, sometimes at intervals of six weeks, two months, and at other times even longer intervals, the last period having been September 28, 1888. She recovered from the operation satisfactorily and presented herself at the clinic after the opera-

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tion very considerably improved. I saw her frequently during the winter of 1888-'89. She occasionally suffered from rheumatism. Of course she did not menstruate.

In the summer of 1889, while I was away, she began to feel very uncomfortable, with nausea and other symptoms. The abdomen gradually enlarged, and it soon became probable that she was pregnant, and as time went on there was no question whatever that she *was* pregnant. On July 31, 1889, she was delivered of a fine baby, which was presented in the clinic, and which she tells me is still alive and doing well.

The ovaries were removed November 20, 1888, and she has had no menstrual period since. I have the specimens of the ovaries and tubes in my possession, and I hope to be able to show them to you at some future time. I think I can prove to you that the ovaries were thoroughly removed, which is corroborated by the subsequent history of the patient. The patient must have been pregnant about a month at the time they were removed. I believe I should do the operation under the same circumstances if a case presented itself to-morrow, though perhaps I should be a little more careful in determining whether pregnancy was present at the time or not The urgent necessity of doing something to prevent the menstrual returns, which were accompanied by the hystero-epileptic seizures, certainly must be acknowledged. I do not think any one will say that other treatment would have been better. If such a case presents itself to you, and the patient has been under skilful treatment for five or six years, as in this case, without any material benefit, it will become your duty to operate. This patient had received treatment of different kinds for five years, and we not unnaturally supposed that she would have been benefited by it in that length of time if it were possible. She would not, I believe, have gone through her pregnancy had the ovaries not been removed and the epileptic seizures stopped. She tells me to-day that since the operation she has had no return of the epileptic seizures. She has, however, about once a month, slight fainting spells, but which are not serious, and she is in far better health, as her appearance shows.

She suffers now from neuralgic or rheumatic pains in the ovarian region, and thinks there is still a tumor, but none can be found. This disturbance will continue for quite a time, but will gradually fade away as the organs atrophy. Undoubtedly there are permanent pathological conditions where the ovaries were, caused by the breaking up of the adhesions, and the cicatricial condition of the parts will give rise to neuralgic pains. Men who have had their limbs broken or dislocated suffer from rheumatic pains in the injured limbs. In other words, the cicatricial or abnormal tissues are the ones most likely to suffer.

While it is an interesting case and one upon which criticism might be made for removing the ovaries, yet when we consider the fact that she was under treatment for five years and was gradually growing worse, I feel that we were justified in removing the ovaries at that time.

I believe the ovaries and tubes were thoroughly removed or she would have menstruated again, and I am satisfied that there is no third ovary left from which she can subsequently become pregnant, or from which she is likely to have trouble. Her future will be a decided gain upon her past. She has been relieved of the hystero-epileptic seizures, but she will be nervous, perhaps for years, because she has a weak and shattered nervous system from which it will take a long time to recover.

The right ovary was five or six times its normal size; the walls of the right tube were thickened, and its fimbriated extremity was closed and had developed into a cyst the size of the diseased ovary and was filled with a serous fluid. The right ovary and diseased tube lay behind the uterus and were constantly teased by the pressure of that organ. The left ovary and tube rested upon and were adherent to the broad ligament. This ovary was two or three times the normal size, and the tube was shortened and thickened and partially adherent to the ovary at its fimbriated extremity.

2400 INDIANA AVENUE.

NEPHRECTOMY. SARCOMA OF THE JAW. TUBERCULAR ABSCESS. ALVEOLAR SARCOMA.

A Clinical Lecture
delivered at the Hospital of the Jefferson Medical College, February 8, 1890.

BY WILLIAM W. KEEN, M.D.,
PROFESSOR OF SURGERY IN THE JEFFERSON MEDICAL COLLEGE.

NEPHRECTOMY.

GENTLEMEN: I shall, in the first place, occupy a few minutes in showing you a specimen which I removed yesterday. The patient is a young woman, aged twenty-four years, who had undoubtedly for some years a floating kidney. As a result there developed first an intermittent and later a permanent hydronephrosis. This formed a large cystic tumor in the abdomen which was tapped and drained by my friend Dr. Joseph Price. The operation was followed by a urinary fistula. Dr. Price informs me he would have removed the kidney had the condition of the patient warranted it. My attention was recently called to the case by Dr. James C. Wilson, her attending physician. I found a considerable quantity of pus as well as urine discharging through the fistula. In addition there were only from nine to twelve ounces of urine secreted by the healthy kidney (the left), and I decided not to operate until this kidney should be whipped into greater activity. In order to determine whether the ureter of the right kidney was patulous and therefore whether the urine from the bladder all came from the left kidney, I injected milk through the fistula on the right side of the abdomen and a little later drew the urine. I found the urine free from milk and concluded that the right ureter was impervious. As ascertained by Dr. Charles M. Wilson, the urine of the left kidney was free from albumin and sugar, though its percentage of urea was normal, while the discharge from the fistula contained albumin and pus and its percentage of urea was much diminished.

Under suitable treatment the left kidney became more active and her condition improved so much that I operated yesterday. The difficulty, as you can readily understand, was to secure an aseptic operation, in view of the constant discharge of urine and pus from the fistula. Dr. Charles M. Wilson first closed the fistula by his finger. Then the abdominal wall was quickly

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cleansed by a 1:500 sublimate solution. Next, I made a vertical incision into the peritoneal cavity very close to the fistulous opening, and as quickly as possible got my thumb and finger in so as to seize the neck of the sac that I might prevent any contamination of the peritoneal cavity by the urine and pus. I then made a short transverse incision and dissected loose the mouth of the sac. As soon as this was ascertained to be free from any adherent intestine it was clamped by a large pair of forceps. Then I readily drew out and removed the kidney and sac which I now show you. The temperature this morning is 99.8° and she has secreted eleven ounces of urine in less than twenty-four hours. Her prospect of recovery is therefore good.

[NOTE.—In one week the stitches were all out. She made an excellent recovery, the other kidney secreting from thirty to forty ounces of urine a day.]

RESULT OF OPERATION FOR TUMOR OF THE BREAST.

I have next to show you the case of amputation of the breast for cancer on which I operated one week ago. I have seen this wound twice. The first time was twenty-four hours after the operation. You will remember that the breast was amputated, but as the tumor was pretty clearly a fibroma and as the axillary glands were not involved, I did not open the axilla. But I did not hesitate to remove the entire breast and tumor, for at her age, forty-two years, I am fearful that any tumor of the breast may undergo malignant degeneration. On Sunday morning I removed the dressing, which was saturated with blood, and took out the rubber drainage-tube. The dressing was again removed on Wednesday and there was scarcely a stain upon it. At that time I removed one-half of the stitches and the horse-hair drain which had been left to favor the escape of the slight serous oozing. The wound is now, as you see, practically healed in one week, and the patient will probably leave the hospital to-day. The temperature has not been over 99° and most of the time it has been normal.

This is the result that I always expect, and if I do not obtain it, I am sure that there has been, on my part, some mistake, either of omission or commission.

SARCOMA OF THE CHEEK AND JAW.

The next case which I bring before you is one which I approach with a great deal of hesitation. The growth involves the whole of the left side of the lower jaw, the cheek, and a large portion of the floor of the mouth. It is growing rapidly, and although it began only some ten weeks ago, has reached a large size. The question in my mind was whether or not any operation should be done. I have put the matter frankly before the patient and he decides in favor of operation. Professor Brinton and Dr. Hearn saw the case with me a few days ago, when all the possibilities were laid before the man and he decided to accept operation. If it were not for his positive decision, I should prefer not to operate.

The dangers of the operation are twofold. The first is hæmorrhage. The tumor goes rather deeply under the jaw and almost certainly involves all of the branches of the carotid artery with the exception of the posterior ones, and we shall, therefore, have abundant hæmorrhage. The jugular vein as well as the carotid artery is probably involved in the growth. And this causes two unfavorable complications. As the operation involves the mouth, the blood will pass into the trachea, obstruct the breathing and so interfere with the operation, and it will also favor the development of pneumonia. In order to avoid this danger, I propose to perform a preliminary tracheotomy and then use the canula of Trendelenburg. This, as you see, is a tracheal tube having around it a little bag of rubber which can be distended by compressing the bulb connected with it. When inflated the rubber bag completely fills the trachea so that no fluid can enter from above. By means of a flexible tube connected with the tracheotomy tube proper the chloroform enters the lungs. The use of such apparatus is a necessity in certain operations about the mouth where much bleeding is inevitable. Some of you saw Professor Annandale, of Edinburgh, operate in this amphitheatre eighteen months ago, using this apparatus in a case of naso-pharyngeal polyp.

Another and greater danger is that the hæmorrhage may prove directly fatal. In a large professional experience it has been my good fortune so far never to lose a patient on the table. The nearest I have come to it was in a case of lumbar nephrectomy for cancer where it was impossible to complete the operation on account of adhesions. The hæmorrhage was abundant and the patient died three hours after the operation. It is not impossible that this patient may die upon the table. Even if the hæmorrhage is not quickly fatal it will be a severe shock to him and be a source of great danger at a later period.

As it will probably be necessary to tie all the branches of the carotid artery—the thyroid, the lingual, the facial, the temporal, the internal maxillary and smaller muscular branches—I propose, in order to avoid the primary hæmorrhage, which not only impedes the operation but also causes immense shock to the patient, to ligate the carotid artery prior to the operation upon the tumor itself.

I have told the man definitely that the chances are that the tumor cannot be removed, that he has a fair chance of dying from the immediate operation as a result of shock and loss of blood, that there is a chance of his dying later from septic trouble, for it is impossible where we have to remove the jaw, a part of the cheek and a part of the mouth, to have an aseptic wound. It cannot be kept so on account of the exposure to the air, the saliva and the food. I have also told the man that after I have removed this as well as I can, it will probably recur and destroy his life. All these possibilities, I have frankly laid before him and still he elects operation. Is it my duty absolutely to decline to operate? This is a grave question, one of those questions which affect a man's moral as well as his professional sense. The conclusion which I reached long ago after a careful consideration of this question is, that if after all the dangers of an operation are faithfully and honestly laid before the patient he elects operation, the surgeon should be willing to give him the one small chance that he has, provided there is a reasonable possibility of his recovery. Suppose even that this case is fatal in an hour, or twenty-four or forty-eight hours, how will that compare with doing nothing? He will have a painless or practically almost painless exit. It will be speedy, and I confess that, so far as I am concerned, had

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I such a growth, I should pray for the speediest death that could come to me. I do not expect to do much toward prolonging this patient's life; I may even terminate it more quickly than it would otherwise would be, but I am giving him, at his own positive choice, the only possible chance that he has. I may be unable to complete the operation, but I shall take away all that I can.

While the patient is being brought in I will give you briefly his history.

George B., aged thirty-six years, born in Philadelphia, was admitted to the hospital February 3, 1890. His occupation is that of a boiler-maker. He states that one year ago he had the roots of two decayed teeth extracted leaving a sound one between them. This was on the same side of the jaw (the left) that the growth now occupies. He also noticed a small kernel the size of a Lima bean just beneath the body of the left inferior maxilla, but paid no particular attention to it. Three months ago he was struck with considerable violence just above this kernel by a flying rivet-head. The bruised spot became slightly swollen and red. Two weeks after the injury he consulted a physician and tincture of iodine was applied for a fortnight without improvement. Then the sound tooth above mentioned was extracted with the hope that this would permit the escape of pus. The cheek, however, continued to swell and the gum also became enlarged. Poultices were then applied, and two months after the bruise the swelling was lanced and a small amount of pus and blood discharged. The tumor then somewhat diminished in size, but still remained hard. When admitted five days ago there was a discharge of bloody serum, and when pressed upon pus and blood-clots escaped. The tumor has doubled in size in the past four weeks.

Now that the patient is before us, you see the tumor, which is as large as a fist. I employ chloroform as the anæsthetic in this case, because if we use the Paquelin cautery there will be no danger of fire as would be the case if ether were used.

The man, you will observe, takes chloroform very badly; his pulse is feeble and his color bad, and in face of these new conditions the question again arises whether I should proceed with the operation, which, as I have explained to you, is of a threefold character: tracheotomy, ligation of the carotid, and removal of the growth. I will ask Professor Brinton to examine his condition.

After consultation with Dr. Brinton I am decidedly of the opinion that I should do nothing. I might tie the carotid, which would probably diminish for a time, at least, the rapid growth of the tumor, but his condition is such that I think it unwise to undertake even this part of the operation. Death would be inevitable in a very few minutes.

You can now easily understand, gentlemen, how the judgment of the surgeon must instantly vary with changing conditions, and this case is much more profitable to you as a lesson than if you had seen the operation. I should be very foolish—not only foolish, but I should do wrong if I attempted to do an operation which would absolutely give no chance, but kill the patient on the spot. We never have a right to do that. While I might pray for a speedy death if I had such a disease myself, yet I have no moral right to give this man an euthanasia either by chloroform or by operation. This question arose a few years ago and was widely discussed in the medical and popular magazines for a long time. The almost universal conclusion, in fact so near universal as to make the exceptions prove the rule, was that we have no right in a case of cancer or other at present incurable diseases to set the limits and say "thus far shalt thou live and no farther," and to give one what has been properly called an euthanasia, a happy, easy death. We have no right to destroy life, though we may risk life. We may run great risks to save or to lengthen life, just as a general will run great risks for victory, but we are not justified in going into absolute and certain defeat.

TUBERCULAR ABSCESS.

The next patient that I bring before you is a colored woman, twenty-three years of age. Six months ago, after lifting a heavy weight, she felt pain just above the right breast. The pain continued for one month. She then consulted a physician and topical applications of iodine were advised. Later a hard lump appeared, the pain leaving on its appearance. The lump has gradually increased in size and is now half as large as the fist.

The family history is that the parents and grandparents are healthy, but a sister of the patient died one year ago at the age of twenty-one, of phthisis. This is the only case of consumption in the family so far as we have been able to ascertain.

You see here a soft, fluctuating tumor over the manubrium and under the inner end of the right clavicle. It is painless and is growing slowly. The skin is perfectly natural and there is no sign of an acute abscess. But the tumor evidently contains fluid. My judgment is that it is a so-called "cold abscess," which is really no abscess at all, for the matter present is not pus. It has been proven beyond cavil that such matter is the result of tubercular degeneration and not a purulent product. There is no fever in this case. If this were a phlegmonous abscess it would have ruptured long ago.

The question comes up, What shall we do for it? What I like best is the introduction of ether and iodoform. Originally glycerin and iodoform were employed. The advantage of ether is that it vaporizes the moment it enters the sac and carries the iodoform into every crevice. The modus operandi is very simple. I shall employ this aspirator, which is provided with a two-way stop-cock. It can, therefore, be used either to remove or inject fluids. I employ the largest sized canula that goes with the instrument. The stop-cock being shut off the piston is withdrawn, making a vacuum in the barrel of the syringe. The needle is then introduced through the skin and when the eye has disappeared the stop-cock is turned so that the vacuum is continuous to the end of the needle. The needle is then forced onward, and as soon as fluid is reached it will be seen as it passes through the little glass tube inserted in the rubber tube which connects the needle to the syringe. When the syringe is full the stop-cock is turned so that the fluid can be thrown out into a basin. Another syringeful is withdrawn in the same way and this process is continued until the sac is emptied. All the broken-down matter being removed the cavity is washed out with warm boiled water. Having washed out the sac, I am

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ready to introduce the ether and iodoform. The strength of this is one to twenty, and the quantity injected should not contain over one drachm or a drachm and a half of iodoform.

There are two things to be considered in connection with this patient. One is: Are the sternum and the ribs involved? I think it probable that this "cold abscess" has arisen from some disease of these bones, the result of her violent effort. It may possibly prove necessary at a later date to lay open the swelling and remove the carious bones. The second point, which is of considerable importance, is: Does this cyst communicate with the cavity of the chest? How can we tell? By continued compression. I have tried this, and there is no evidence that there is any communication with the chest. If there were, I should hesitate to inject a large quantity of this solution.

The diagnosis here is tubercular abscess, and I see no reason to doubt its correctness; but we must remember one thing, and that is that we all make mistakes. I am more charitable than I used to be, for I have made a good many mistakes in my day. You remember in the case we had a week ago to-day how the diagnosis wavered—first a cyst, the character of which was uncertain, then it was thought possibly to be a growth connected with the submaxillary gland, and finally, after dissecting out the submaxillary we reached a sebaceous cyst near the floor of the mouth, undoubtedly resulting from invagination of the skin in fœtal life. There is always a possibility of mistake in these cases. I bring them before you, and if I am wrong you will see it. I shall never forget a mistake that I saw made by the distinguished Langenbeck, of Berlin, a most skilful operator and accurate diagnostician. While I was at his clinic in the winter of 1865 and 1866, he diagnosed a tumor as a mammary scirrhus and at once removed the breast. After taking it out he turned to the class and cut it in half, and was a good deal surprised when he opened an abscess of the breast. Looking at it for a moment, he naïvely remarked: "Well, gentlemen, I never made that mistake but once before." Those of us from America remarked that that was a new way of opening an abscess of the breast—first to remove the breast and then open the abscess.

Before I inject the ether and iodoform, I shall take advantage of the flaccid condition of the sac to explore the condition of the bones beneath it. I find a deep cavity over the sternum, so that this is probably a cold abscess arising from traction by the pectoral muscle on the sternum and possibly also the ribs. I now introduce the ether and iodoform, proceeding slowly so as to determine the effect of the vaporization of the ether. This is at first a little painful, but the solution soon exerts its anæsthetic effect. As you see, the sac at once becomes distended and is larger than before it was emptied. One trouble resulting from this is that the pressure is so great that when the finger is removed from the opening a quantity of the fluid is apt to be forced out. In order to avoid this as much as possible, I apply a large piece of rubber plaster over the opening and secure it by a bandage.

A lumbar or psoas abscess can be subjected to this treatment, and sometimes in twenty-four hours the patient can go about, although I prefer to keep him quiet for at least two or three days. Two or three injections may sometimes effect a cure. Occasionally even one is sufficient—as in a little girl of fourteen years, now in the wards, cured of such a tubercular "abscess" a short time since by a single injection.

RARE FORM OF ALVEOLAR SARCOMA, SURROUNDED BY A LAYER OF VARICOSE VEINS.

The case that I shall now show you is, I think, an example of a very common form of tumor, but as I have told you before, there is nothing so uncertain as the character of a tumor. You can say that it is a soft or a hard tumor, but to say positively what is its nature is very difficult. Your patients, however, expect you to know all about it, and you will be constantly asked whether a certain growth is a "cancer" or a "tumor." In other words, whether it is malignant or benign. You are generally pretty safe in pronouncing it a "tumor," and in your opinion to the patient you need not go any further. You may say to yourself that it is a fatty or a sebaceous or other form of tumor, but do not be too sure in telling the patient, for you may find that it is not the kind of tumor that you first thought.

This tumor has been present for three years. It occupies the posterior part of the left thigh. It is not painful. It is movable. While it does not fluctuate, it is just on the verge of it. It is soft and resilient. You must remember that at the temperature of the body the fatty and sebaceous matter that we have in the tissues is not solid, as you see the fat about a sheep's kidneys in the shambles, but almost fluid. This tumor has no pulsation. Taking these facts into consideration, my decided conviction is that this is a fatty tumor. As I have told you on another occasion, there are two kinds of fatty tumors. One is a pure fatty tumor which is lobulated. Such a tumor can be enucleated without difficulty. There is a second form, a fibro-fatty tumor, in which there is a considerable amount of fibrous tissue. These fibrous trabeculæ stretch out in all directions and are attached to the skin, making it much more difficult to remove, as they have to be cut through.

Is it possible to tell which variety of fatty tumor you have? Generally you can. If you grasp the skin over the tumor and pinch it up, if the tumor is of the fibrous variety, each little fibre will draw down the skin and produce pitting. This would be absent in a pure fatty tumor. The proper thing to do with a fatty tumor is to take it out. I have never seen such a growth undergo malignant change. They, however, never get any better. They frequently become so large as mechanically to cause great inconvenience and annoyance. I have seen the skin over them ulcerate and the greatest discomfort produced.

While the patient is being etherized, let me say a few words in regard to the organization of an operation. Before you begin any operation you must decide what instruments, what special appliances, and what dressings will be needed. Give a written list of them to the nurse the day before the operation, so that everything shall be ready before operating. Many years ago I had a printed formula made out showing what preparations should be made in the room, the bed, the patient's person, and what instruments, dressings, etc., would be needed. I have found this a most useful plan, saving me a deal of time and annoyance. You must not forget the dry bichloride of mercury towels. I have seen more than one patient suffer decidedly from cold, shock, and rheuma-

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tism in consequence of the wet antiseptic towels spread over the field of operation. I never use the wet towels except in an emergency. In ordinary cases, I direct that the night before operation one or two dozen towels be wrung out of a 1 : 1000 bichloride solution, hung up and dried. They are then folded and an antiseptic towel wrapped around them. These are spread around the site of operation. In the hospital sheets are prepared in the same way. In operations about the head and neck, where the patient is liable to throw his hands about, it is well to pin a prepared towel around his arm. The operator can then grasp the arm without danger.

We shall now proceed with the operation. The tumor, as you see, occupies the posterior part of the left thigh. You observe that there are numerous varicose veins in this region and we must avoid them. I make an incision in the axis of the limb and immediately come down on the tumor, which now does not present the appearance of a fatty tumor. When I saw these varicose veins, the idea of a blood tumor suggested itself, but the fluctuation did not seem distinct enough for that. Making a small incision into the tumor, there is at once a free discharge of venous blood. I close the opening with hæmostatic forceps. It will be necessary to enucleate this mass very carefully, for these varicose veins always have very thin walls. Underneath these veins is a more resistant mass, much harder than the veins, but yet approaching to fluctuation. You see now how deceptive a tumor may be. All the physical signs here were those of a very common form of tumor—a lipoma. Dissection reveals a very rare form of tumor, for Professor Brinton tells me that he recalls only one instance at all like this, and I cannot myself remember ever to have seen even one similar case.

[NOTE.—The operation was prolonged by the numerous fibrous trabeculæ, which had to be cut one by one with care so as not to injure the large varicose veins on the surface. Eventually the entire mass was dissected out and removed, no pedicle, vascular or otherwise, being found. When removed a large opening in the fascia lata was found immediately under it. Dr. Coplin examined it and found it a soft alveolar sarcoma covered with a layer of varicose veins. It had probably originated in the connective tissue under the fascia, later forced its way through this dense fascia, the fibres of which produced the trabeculæ above described. The patient was shown to the class a week later entirely well, his highest temperature having been below 100° F.]

ORIGINAL ARTICLES.

THE TREATMENT OF MEMBRANOUS DYSMENORRHŒA.

BY J. N. MARTIN, M.D.,

ACTING PROFESSOR OF OBSTETRICS AND DISEASES OF WOMEN IN THE UNIVERSITY OF MICHIGAN, ANN ARBOR.

WHILE we are not able to speak positively concerning the etiology of membranous dysmenorrhœa, the microscope has made a correct differential diagnosis possible. Without the use of this instrument it is impossible to ascertain whether the mass expelled from the uterus is dysmenorrhœal membrane, a product of conception, or a blood-clot which has been retained in the uterus and with the fluid portion squeezed out. Experience in treatment has taught us to be guarded in our prognosis. While most cases of true membranous dysmenorrhœa cannot be entirely cured, yet I believe it is equally true that almost every patient suffering from the disease can be materially benefited by careful and systematic treatment.

There is a mass of membrane to be forced through a canal of given size which perhaps is sufficiently large for the fluid menstrual secretions to pass without causing pain, but not large enough to permit the abnormal formation to pass without much expulsive effort and consequent pain. Again, if the disease has existed a long time, there is more or less inflammation of the uterus which adds inflammatory to membranous dysmenorrhœa. And again, this extreme suffering accompanying the condition produces a marked effect upon the nervous system; and so great is this result in some patients that they become nervous or mental wrecks. Then by treatment we should strive to prevent the formation of the membrane or to favor disintegration at the time of the menstrual period, and also to get rid of the results. Not understanding the cause of the formation, we are working in the dark in endeavoring to get rid of it.

While there are many forms of treatment, I have had satisfactory results with the following plan:

First. To relieve the inflammation of the uterus as much as possible between the periods with prolonged hot-water douches once or twice daily; applications to the interior of the uterus two or three times per week of equal parts of 5 per cent. solution of carbolic acid and Churchill's tincture of iodine; and also the use of tampons saturated with glycerin, hydrastis, or boro-glyceride (10 to 20 per cent. solution).

Second. To correct constitutional disturbances and give nerve and general tonics. Bromides and similar agents generally make patients worse in the end, and I never resort to opiates except in the most extreme cases.

Third. To divulse the cervical canal from five to seven days before the time for the period; repeating for two or three months: thus making the canal so large that the membrane may be passed with but little expulsive force. Sometimes after divulsing, inflammatory pains are slightly worse for one or two periods, but in the end it benefits in a majority of cases.

Fourth. To prevent the formation or to favor disintegration, I scrape the uterus thoroughly with a dull curette in the middle of the inter-menstrual period, and afterward apply 1 : 300 or 1 : 400 solution of bichloride of mercury to the interior of the

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uterus once in three or four days, and repeat for from two to five months, as may be indicated.

I have followed this plan for about four years, and can say with truth that I have considerably benefited every case excepting one. Two cases were entirely cured; at least it has been more than a year since one of them passed any membrane, and nearly a year since the other did so.

The one patient not relieved does not pass a membrane every month: about every third month there is no membrane expelled, but at each period following the omission, she passes two membranes one within the other. On January 15, 1889, I presented this patient in clinic, with a double membrane expelled, and also another patient with membranous dysmenorrhœa who happened to be in the University of Michigan Hospital for treatment. Five patients with well-defined membranous dysmenorrhœa were presented to the class last year, and I saw two others in private practice.

PHTHISICAL PATIENTS AT CLIMATIC RESORTS.

BY CARL VON RUCK, B.S., M.D.,
OF ASHEVILLE, N. C.,
MEMBER AMERICAN CLIMATOLOGICAL ASSOCIATION, MEMBER AMERICAN MEDICAL ASSOCIATION, DIRECTOR WINYAH SANITARIUM FOR DISEASES OF THE LUNGS AND THROAT, ETC.

IT would be most instructive if accurate data could be obtained of the benefit derived from the climatic treatment of phthisis, and particularly so if we could get at the number of real cures which result therefrom. But, as with any other method of treatment which we carry out in our daily practice, it will ever be more or less difficult to ascribe to the means employed their proper value, and after the result is known it may always be conjectured that if this or that had been done the outcome would have been different.

Much of our therapeutical knowledge is empirical, and this is particularly true of our resources in the treatment of consumption. Climate has stood the test of experience for centuries, and is to-day still recognized as, perhaps, the most valuable of all the means available in our battle with this disease, not only by the profession, but by the laity as well, and what everyone believes must contain at least some truth. I am far from underestimating the value of climate, the beneficial influence of which I daily see convincing evidence. Do we not see, almost at once, improvement in one or several directions, with the arrival of many such patients—a steadily falling pulse-rate, diminution of cough, expectoration, and fever, increase of the appetite and assimilation, and gain in body-weight, especially if the patient is at once put upon a proper regimen? Besides, there are many undoubted cures on record at such climatic resorts, and, although not accessible to statistical demonstration, the proportion, as compared with most painstaking management at less favorable localities, is such as to remove all doubt from the mind of the unbiassed observer in favor of the climatic treatment of phthisis.

I have, however, also observed that the disease is curable in less favorable localities, even where it is very prevalent, and that under proper management much better results than the usual can be obtained, comparing, indeed, most favorably with climatic treatment as usually carried out, or, at least, with the results which I have been able to observe, when climate was chiefly relied upon for a cure.

If, then, climate has any value at all, the results must improve in proportion as we carry out, in addition, the management which is found valuable in the absence of a favorable climate, and this, too, my experience has verified. In gaining such experience I have guarded myself as well as possible against erroneous conclusions, and have based them, in the first place, upon a comparison with my results obtained at what must be considered an unfavorable locality, and again, upon results in cases which I considered under proper management in addition to climate, and still others, under the same climatic advantages, but treated under conditions where it was impossible to enforce the essential regimen.

Anything which, in view of the great mortality, can contribute ever so little to better results, or which may be honestly believed by a careful observer to have so contributed, deserves the careful attention and consideration of the profession, and obviates the necessity for an excuse in bringing up a subject so much debated and written upon as is the one under consideration.

Believing as I do, that the conduct of the patient while undergoing climatic or any other mode of treatment, other things being equal, is responsible for success or failure in almost all cases where there is still reasonable ground for hope, and that such conduct, either through ignorance or wilful disregard of advice, is faulty in the great majority of cases which I have observed; and believing, also, that I have had unusual opportunity for observing, it is my object to point out the things that such patients do, or do not do, to their detriment, so that a more watchful care, more pointed advice, and stronger reprimands will be administered by those who assume the duties of medical adviser to these unfortunate sufferers.

This watchful care, this continuous exhortation to the path of duty, these frequent reprimands for commission or neglect, or the words of approval for painstaking compliance with our orders and advice, make up much or all that is essentially proper management, providing, of course, that the advice itself is sound and proven by experience to be the best.

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Many patients have little will-power to begin with, and as disease has still further reduced it, they flounder on the slightest occasion; many others have become wise in their own conceit, have borrowed medical books and read up their case, know a great deal, and like to play their own doctor, or argue the case with their physician; others listen to the advice of every quack medical advertisement, or any advice backed by a story of wonderful recovery; others still, expect miraculous results in the course of a few weeks or months, and are most easily discouraged. All these to be benefited at all require strict supervision and management in a well-conducted institution. Most difficult they are to manage, even there; and, if the whole *clientèle* in an institution should be made up of such material, may the Lord have mercy upon the managing physician!

There are, fortunately, a goodly number of sensible and reasonable patients who are willing and anxious to profit by our advice, whom we can trust in all ways, and who, if they err, do so only from ignorance. Such patients do well outside of institutions, also, and with the exception of the advantage of prompt aid, should any complications arise, they are as well off in private practice, provided the physician can see his patient frequently, and the conditions of hygiene, proper diet, rest, etc., are equally good.

But to come to the faulty conduct of phthisical patients at climatic resorts: First, most of them do not wish to admit that they are sick—they have come for a change only, and endeavor to play the *rôle* of a well person; they say that their physician has told them that there is "nothing really the matter with their lungs," being only "weak," or that they have only bronchitis or throat trouble. All this leads them to a feeling of security or to expect that the climate "will fix everything" in a short time.

I contend that the physician who sends away a phthisical patient for climatic treatment sends a sick person, no matter how early the stage of the disease, and that this patient needs competent care, supervision, and advice from the day he reaches the climatic resort until he is cured; unless this is the case he will, in all probability, derive little or no benefit. A patient who is to recover should be made to understand by his physician that it takes a considerable length of time, even in the early stages, to effect a cure; that it will cost not a little money, and that a few weeks or months are entirely inadequate. All this can be done without depriving the patient of hope for his restoration.

Second. The patients who are at all able to undergo climatic treatment come from a class who have comfortable homes, good beds and food, and live in houses well heated, with inside water-closets and baths; and, finding prices higher than they anticipated on leaving home, frequently go to cheap boarding-houses, where they forego many comforts and conditions absolutely essential to their favorable progress. If anything, better conditions than those to which the patient has been accustomed should be secured, and to get them at health resorts, which are far distant from centres of supplies, means increased expenditures over what would be required for the same accommodations at home. Patients who are sent away should be made to understand this, and that a few dollars expended to get the necessary accommodations are well invested.

Third. Upon arrival at climatic resorts the amount of out-of-door life and exercise requires careful regulation, and it must depend entirely upon the conditions existing in the individual case. But many come only with the idea that the more exercise they take the better, and instead of judicious rest after their journey we find them out bright and early after their arrival, on a hunt for boarding-houses, often on foot, the fatigue which should be avoided frequently amounting to actual exhaustion, and there are cases where the first day spent in the manner described leaves effects never to be recovered from. After being settled they continue to exercise far beyond their strength and endurance, taking unaccustomed horseback rides, with parties of well-trained riders, ascending mountains when exercise on level ground should be limited, and all this regardless of fever or other complications. At night they visit clubs, play cards, dance, and follow their inclinations for amusement, which, perhaps, permissible within reason for some, can only bring disaster to others; they then find that the looked-for improvement in appetite, etc., has either not been realized at all or been very transient, and they begin to doubt the judgment of their home physician who recommended the climate.

Fourth. No case should endeavor to work out his improvement or cure at a climatic resort without professional oversight. This is a delicate point for physicians to urge who practise at such resorts, and I content myself by quoting at length Dr. Clifford Allbutt,[1] from Dobell's monograph on the initial stages of consumption:

"Let us, then, bring the friends always and the patient generally to realize that recovery from phthisis, however incipient, probably means a very costly and prolonged system of treatment, and, what is more, a steady, clear-eyed persevering walk on the part of patients and friends, if success is to be obtained. Now, when a man has had it put straight before him what phthisis means, even in its small beginnings, he will learn that a serious, an unflinching and vigilant attitude is his only way of safety; and a little homesickness, some sense of tedium, and some love of change must not be allowed to turn him from his long and arduous course. Once more I would

[1] Lancet, October 13, 1888.

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urge on all phthisical patients the importance of incessant medical supervision. Apart as I am from practice in Alpine health resorts, I may brush aside all scruples, all suspicion of self- or class-service, in saying this and repeating it. For those medical men who do practise in these health resorts there must be a fear of misconstruction of their motives when constant supervision seems to them more necessary than it may seem to the patient or his friends. But scruples of this kind, honorable as they are to the physician, must give way to a clear view of the need of such supervision. The patient must be kept at his best—at the best of his digestion as well as at the best of his pulmonary disorder. His temperature should be again scheduled whenever any sense of lassitude is felt, and the catarrhal or other varying conditions of the lungs should be systematically recorded. Not only so, but the regular visits of his doctor keep up the patient's serious resolve, strengthen his will, inform his judgment, and discipline his habits. And in all this lies most of the battle."

These, Dr. Dobell says, are the wise and considerate words of an unusually wise, experienced, and independent practical physician. Dr. Allbutt has applied them to cases of phthisis, even in its early stages:

"They apply to it more and more strongly as we go further and further back in its small beginnings to what I wish to be emphatically recognized as the smallest of all beginnings, its true first stage, its pre-tubercular stage, its stage of comparative simplicity and of comparatively easy cure."

But if this is all true, as it no doubt is, what is to be said of the needs of the cases who are well advanced in the early stage, who are upon the confines of the second stage, and in whom still a fair percentage of recoveries or rather permanent arrest of the disease is possible?

As a rule, medical men who practise at resorts are not consulted by patients sent there unless some complication arises, or when the patient himself fully realizes that he is getting worse instead of better, as he had expected. The complications passed, the regular attendance ceases until the next relapse again requires professional aid or advice.

Under such conditions no painstaking physical examinations are made matters of record for future comparison, and the regimen and advice are adopted only for the exigencies of the time being. Under such conditions not much progress is possible, but, if any is made, it is, as a rule, undone by some indiscretion.

Take, however, the cases of patients exercising little control over their inclinations, who suffer so frequently from gastric and intestinal derangements due to errors of diet; take those who, in the state of advancing disease or softening processes, suffer from more or less continuous fever; the cases with repeated slight or more severe hæmoptysis, or cases with frequently recurring pleuritis; take cases with tubercular laryngitis, with nasal catarrh, and stenosis—how are all these to get on under self-management?

Fifth. Phthisical patients, as a rule, give up climatic treatment and professional management at a period when arrest of the disease is but temporary, and when, if possible, the efforts should be doubly rigid and vigilant to make such arrest a permanent one and an actual cure. They mistake the attending improvement in general health, the returning strength, for evidence of cure, and propose to let the little remaining cough wear itself out at home. Ninety-nine out of one hundred of such cases relapse sooner or later, and regret bitterly enough when it is too late that they abandoned perhaps their last or only chance. Such patients, if under medical care at all, do not consult us often as to the propriety of their course, unless with the expectation of following it even if we should dissent. As a rule, they tell us that they think they are well enough to go home, or they have come for so many weeks or months only and the time is up. Many times our remonstrances are less strong for fear that our motives may be misunderstood; and for better results in all these matters nothing can have a greater influence than the home physician's support and advice.

Some climatic resorts have the disadvantage of being available only for certain periods of the year, and, of course, changes from such to others are necessary with change of season. But Asheville, although possessing a most favorable all-year climate, has, nevertheless, much the same seasons of exodus and arrivals as do the strictly winter or summer resorts. The class who come here in the fall and winter pack up for home in the spring; those who come in the spring and summer (until recently, as a rule, from Southern States) make room for the winter guests. I consider this most detrimental. It takes, usually, several months, or even more, to make any decided gain, and just as the prospects become the best and the chances for a cure have greatly improved, the patient interrupts the favorable progress to go home, or somewhere else, for a season. I strongly contend that a patient who has made real improvement at a climatic resort, and if the conditions of climate are favorable throughout the year, should, under no consideration, attempt a change until a permanent result is obtained.

Finally, it is deplorable that so many far advanced cases are allowed to leave the comforts of home and friends in search of what they can never find. I suspect that many medical men permit these straw-grasping efforts because, in the kindness of their hearts, they are unwilling to deprive the sufferer of this last hope. I doubt if they really do him a kindness. Far better to urge on the early cases—those "in the small beginnings"—so that the necessity will occur less and less frequently of sending them home almost exhausted or dead.

It is chiefly the home physician who is to decide

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what the percentage of recoveries shall be from climatic treatment. Early diagnosed, early sent, properly instructed, and the physician at the climatic station supported in his efforts to enforce a discipline which will result beneficially, are the essentials if we wish to take advantage of every means in the interest of the phthisical patient, who, otherwise, is almost sure to go astray, and whose recovery becomes thus more and more a matter of chance and accident.

ŒSOPHAGOTOMY FOR IMPACTION OF ARTIFICIAL TEETH.

BY JOHN B. DEAVER, M.D.,
DEMONSTRATOR OF ANATOMY AND LECTURER UPON SURGICAL ANATOMY IN THE UNIVERSITY OF PENNSYLVANIA; ATTENDING SURGEON TO THE PHILADELPHIA, GERMAN, ST. MARY'S AND ST. AGNES'S HOSPITALS, PHILADELPHIA.

THE patient, a white man, aged twenty-seven years, was admitted to the insane department of the Philadelphia Hospital in the early part of July, 1889, with the following history: After an alcoholic debauch, lasting three weeks, he became so unmanageable as to require removal to a police station, where he was placed in a cell. While there he fancied that demons were preparing to kill him, which led him to attempt suicide by striking his head against the wall. A few days later he was taken by the police authorities to the hospital.

On admission examination of his face and scalp showed many contusions. He complained of sore throat, was unable to swallow solid food, and could with difficulty swallow a small quantity of liquid. There was profuse, purulent, and offensive expectoration. Examination of the mouth showed an acute pharyngitis, also the absence of a number of teeth from the upper jaw. In the centre of the hard palate was a prominence of mucous membrane like that made by the plate of false teeth. He casually remarked that he had lost his teeth. Local treatment was given for the pharyngeal trouble, with no effect. A probang passed into the œsophagus demonstrated the presence of a foreign body at a distance of about two inches from the commencement of the tube. Having recovered from the effects of the alcohol he was apprised of his condition and advised to have whatever interference might be necessary for the removal of the foreign body, which was most probably the missing plate of teeth. To this he consented, and accordingly I made an attempt to remove the foreign body with a pair of long, well-curved forceps. With them I could reach the body, but was unable to grasp it, and before adopting any other procedure I had the patient etherized. Under complete anæsthesia a second attempt with the forceps was made, but with the same result as before. I now tried to dislodge it with the œsophageal probang, but it was so thoroughly fixed that I was not able to accomplish anything. There was then left but one course for me to pursue, that of opening the œsophagus at the side of the neck. The patient was placed with the head inclined to the right side, the left side of the neck being selected through which to make the incision, and the shoulders raised upon a pillow. An incision, commencing at the sterno-clavicular articulation, was carried through the skin to near the angle of the jaw, when the anterior jugular vein very much distended was seen in the superficial fascia. The vein was ligated at two points and, with the fascia, severed between. The deep fascia was now incised, lifted upon a grooved director and divided to the length of the superficial wound, when the sterno-mastoid muscle with the bloodvessels was displaced backward, the anterior belly of the omo-hyoid muscle downward, and the sterno-hyoid and sterno-thyroid muscles forward. The œsophagus, made prominent by the distention occasioned by the foreign body within, was clearly exposed. Above and below the distended portion of the œsophagus were seen the superior and inferior thyroid vessels. The œsophagus was opened in the line of its longitudinal muscular fibres, when the knife came directly upon a tooth. The wound was then enlarged upward and downward to the extent of two inches, when the plate of a partial set of teeth was exposed lying upside down and crosswise, the front of the plate, containing two teeth, presenting at the bottom of the wound. After a great deal of difficulty I succeeded in removing the plate, and upon removal it was found that a tooth was missing. This was expectorated during the night following the operation, and I have no doubt that it was detached during the extraction of the plate. The wound in the œsophagus was closed with catgut sutures, a rubber drainage-tube placed external to it, and the superficial wound closed with silver wire. The patient reacted well and was nourished for three days entirely by enemata of dextrine, eggs, beef tea, and peptonized milk. From this on he was given, in addition to enemata, milk and whiskey, introduced into the stomach by a pliable passed through the anterior nares. The expectoration continued to have the same character as before the operation.

The wound was dressed the third day after the operation, when it presented a perfectly satisfactory appearance. Two days later, the dressing being much soiled, the wound was exposed and a purulent and offensive discharge was seen escaping from and around the tube. The apparent line of union was much inflamed, showing some signs of breaking down. The following day the discharge having soaked through the dressings, they were removed and the wound was found broken down throughout, the tissues presenting a gangrenous surface. Liquids

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now introduced in the mouth escaped through the wound. Wound packed with iodoform gauze. On the evening of the sixth day after the operation the patient had a chill, followed by high temperature, rapid pulse, and increased frequency of respiration. Examination of the chest demonstrated the presence of pneumonia of both lungs. On the following day, the seventh after the operation, he died.

Autopsy, made forty hours after death. Examination of abdominal cavity showed the kidneys to be large and intensely congested. Spleen enlarged, soft, and pulpy. Other abdominal viscera showed no gross lesions. Heart and pericardium normal. Both lungs contained innumerable dark-red solid areas, varying in diameter from one-eighth to three-eighths of an inch, which appeared to be peri-bronchial. Examination of wound showed the condition as described at the third dressing. The larynx, trachea, œsophagus, and lower portion of the pharynx were removed in a single mass. On the left side of the œsophagus immediately below the cricoid cartilage, was seen the incision through which the teeth were extracted. The edges of the opening were dark in color and gangrenous; it measured one and one-half inches in length and one inch in width On the same side of the lower portion of the pharynx was an opening about the size of that in the œsophagus, and presenting the same appearance. Through this opening was seen exposed the left superior cornu of the thyroid cartilage, also the upper border of the cricoid cartilage. Immediately above the cricoid cartilage, a little to the left of the median line posteriorly, was a small opening leading into the larynx. In the extreme lower portion of the pharynx, posteriorly and a little to the left of the median line, was an ulcer one-fourth of an inch in diameter which had perforated the walls. The mucous lining of the pharynx immediately surrounding the openings was gangrenous. On the laryngeal surface of the epiglottis was a small superficial gangrenous ulcer. There were evidences of an active laryngitis, tracheitis, and bronchitis.

I believe the teeth were first arrested in the lower portion of the pharynx, remaining there long enough to set up the destructive inflammation which resulted in the formation of the openings found, and which, coupled with the efforts of swallowing, caused them to be dislodged; they becoming fixed the second time and permanently in the upper part of the œsophagus from which they were extracted.

In the light of the autopsy it is quite evident that the patient could not have lived with any treatment, but the points for discussion in the case of foreign body in the œsophagus calling for operative interference are the following: First. When it is impossible to extract the foreign body through the mouth, but possible to push it down into the stomach, is it not better to do this, providing its character is such as not to lacerate the walls of the œsophagus, and perform gastrotomy, than to remove it by the operation of œsophagotomy, as the former operation offers a better chance for success than the latter? Secondly. Having done an œsophagotomy is it better to close both wounds, or simply close the œsophageal wound, packing the wound in the neck, or to allow both wounds to remain open? In another case such as I have reported, I would not close either the wound in the œsophagus or the wound in the neck, but would trust to healing by granulation, as I believe in this case drainage was an essential factor which was by no means thoroughly obtained.

THE EMPYREUMATIC OIL OF COFFEE, OR CAFFEONE.

BY EDWARD T. REICHERT, M.D.,
PROFESSOR OF PHYSIOLOGY IN THE UNIVERSITY OF PENNSYLVANIA.

WHEN coffee is roasted an empyreumatic oil is developed which is supposed to impart to it new physiological properties. The actions of this substance have been studied chiefly by means of a distillate obtained from a strong infusion of coffee; by a comparison of the effects produced by the use of preparations of raw and roasted coffee; or by the administration of the pure oil.

In experiments on three individuals Lehman[1] found that the distillate from roasted coffee caused nervousness and slight sweating, and acted on the brain, affecting the mental faculties rather than the imagination. The solid constituents of the urine, such as urea, were diminished to a greater extent than by caffeine. After large doses there occurred congestion, profuse sweating, and sleeplessness. In two instances diarrhœa was noted. Nasse,[2] in experiments on animals, states that when he injected a few drops of a strong infusion of freshly roasted coffee into the jugular vein of a rabbit, peristaltic movements of a decided character occurred in the intestines which he was unable to produce with caffeine. Méplain[3] obtained from a litre of strong infusion of coffee 200 grammes of a liquid which possessed the aromatic odor of roasted coffee and a slight bitter taste. After the ingestion of this the pulse was increased from 64 to 74 per minute, arterial tension was diminished, and the face congested. Marvaud (*ibid.*) obtained similar results. Rabuteau[4] states that he has "recognized in caffeone the exciting properties attributed to coffee. Everybody knows that an infusion of coffee hinders sleep, but that this effect is not invariably present. We have wrongly attributed this difference in action to idiosyncrasy, but it is due to a difference in the composition of the coffee, for while an infusion of coffee

[1] Annal d. Chemie u. Phar., 1853, Bd. 87, S. 275.
[2] Beiträge z. Physiologie d. Darmbewegung. Leipzig, 1866, S. 66.
[3] Les Aliments d'Epargne, 2 ed., Paris, 1874, p. 305.
[4] Compt. rend., lxxi. p. 733.

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containing caffeone prevents sleep, the same effect is not produced by the ingestion of an infusion which has been freed from caffeone by prolonged boiling, or by that which has been prepared from coffee too much roasted, or from green coffee, or which contains a small quantity of the particular substance which gives coffee its peculiar odor." He also found that caffeone possesses decided toxic properties, and prevents the development of low organisms in organic fluids. Binz,[1] in experiments on three dogs with a distillate, obtained results in some respects opposed to those already recorded. The distillate, he states, was of a light golden color, of a very aromatic odor and taste, and cloudy when cold. In one experiment a dog, weighing 720 grammes, was given by the stomach 25 c.c., representing the one-half of the distillate from 22 grammes of coffee, in 150 c.c. of hot water. No phenomena were observed, except a quickening of the heart-beats from 110 to 145 per minute. In another experiment with a dog, weighing 1790 grammes, and drunk with alcohol, 12 c.c. of a distillate from 16 grammes of coffee in 1 litre of water were injected subcutaneously in two places. In six minutes the respiration rate was doubled in depth and frequency. In the last experiment the dog weighed 1840 grammes, and was completely narcotized with alcohol. Before giving the caffeone the arterial pressure was 76 mm. of mercury and the pulse 39 in fifteen seconds. Twenty c.c. of a distillate of 85 c.c., which was obtained from 20 grammes of roasted coffee in 100 c.c. of water, were injected subcutaneously, and 50 c.c. given by the stomach. In ten minutes the pressure fell to 68 mm.; in fifteen minutes, to 66 mm., and in forty minutes, to 56 mm. The force of the pulse was doubly strong, and the heart-beats increased in frequency. The diminution of blood-pressure he consequently attributes to vascular dilatation.

It is obvious that in the investigations above referred to, the actual quantities ingested of the so-called caffeone were not known; it therefore occurred to Hare and Marshall[2] to isolate this substance and study the effects of definite doses. They extracted the oil with pure petroleum ether, and allowed the latter to evaporate spontaneously. The product thus obtained was of the consistency of dilute syrup, varying in color from a light to a dark brown, according to the color of the seeds, and possessing to a great degree the peculiar aroma of roasted coffee. When injected into the jugular vein of a dog the pulse was for a short time increased and then diminished, and the arterial pressure was lowered. If the dose was sufficient to kill, the heart-beats became slower and slower, arterial pressure gradually fell, and the heart was arrested in diastole. The asserted antisoporific properties attributed to caffeone led them to make one experiment on a dog and three on men, in each of which single doses of from 50 to 60 minims were given by the stomach. In the dog and in two men sleep occurred and in one case sleeplessness.

The investigations of Hare and Marshall I have recently supplemented and extended during the progress of a study with caffeine. The oil was prepared in the same manner, and the results obtained from its intravenous injection in dogs were identical. It seemed to me, however, that an oil of such consistency, and which is practically insoluble in the blood, would, when thrown directly into the circulation, mechanically clog up the capillaries in the nerve-centres and elsewhere and thus give rise to serious disturbances. Therefore, in another series of experiments, I substituted for the oil of coffee pure olive oil and obtained similar results. In a third series, in order also to obviate these mechanical effects, the oil of coffee was given subcutaneously in amounts varying from 1 c.c. to 3 c.c. per kilo of body-weight, but without any effect on the heart-beat, arterial pressure, cerebral functions, respiration, or heat phenomena. It is, therefore, conclusive that the empyreumatic oil of coffee, as obtained by Hare and Marshall, is inert.

The positive results recorded by various observers following the ingestion of a distillate from roasted coffee, the evident differences in the activities of infusions prepared from raw and roasted coffee, the change in the properties of the infusion of roasted coffee which occurs from continued boiling or in the seeds by excessive roasting, certainly lead to an inevitable conclusion that some volatile principle is developed during the roasting which is dissipated by prolonged heating and which possesses definite physiological properties. It would, therefore, naturally be inferred that such a substance would pass over in the early distillate from a strong infusion of coffee. I consequently prepared a distillate by placing 500 grammes of freshly roasted coffee in a Florence flask, adding sufficient water to cover it, and collecting the first 200 c.c. distilled. This was of a pale yellow color, slightly turbid, bitter, and had the strong aromatic odor of roasted coffee. A small dog, weighing 6 kilos, whose carotid was connected with the kymographion, was given, by means of the external jugular vein, within ten minutes, 105 c.c. of this distillate in doses of 10 c.c., but without any definite effect on arterial pressure, pulse, respiration, bodily temperature, or otherwise. A similar distillate was prepared from other samples of coffee, but all were inert, although appropriate tests demonstrated the presence of organic matter. The opposite results obtained by different observers

[1] Archiv f. Exper. Path. u. Phar., ix. S. 45.

[2] THE MEDICAL NEWS, 1888, vol. lii. p. 337.

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and myself, lead to the belief that this hypothetical principle is more volatile in some samples of coffee than in others. Whatever may be its nature, it is clearly not identical with the empyreumatic oil which is so abundant in roasted coffee.

PHYSIOLOGICAL LABORATORY, UNIVERSITY OF PENNSYLVANIA.

CLINICAL MEMORANDA.

TOXICOLOGICAL.

A Case of Cannabis Indica Poisoning.—On February 15th, at seven o'clock, I was called in haste to see Mr. B., a single man, aged thirty years, and found him almost in collapse, with moist, pale, cold skin, fingers and lips blue, pulse very weak and rapid, respiration slow, mind clear, though excited by the dread of death. He complained of shocks like electricity passing through the body, beginning at the neck. These spasms were so marked that they could be felt by those rubbing his hands and feet. He complained also of burning flashes of heat proceeding from the thorax. He felt them coming, and showed a great dread of death at such times. He also had great difficulty of breathing, with a weak and very rapid pulse, which was scarcely perceptible.

I at once administered carbonate of ammonium and whiskey (no digitalis being at hand), to which he responded very promptly for a short time. His extremities were rubbed with whiskey, and hot-water bottles were applied to his feet.

I then inquired for the history. No similar attack had ever occurred. He had taken a teaspoonful of medicine three-quarters of an hour before, but what it contained he did not know. While at the supper-table the symptoms suddenly came on, and he called to some one to catch him, as he was falling. He had just recovered from influenza, and this medicine was given as a tonic. I excluded fainting, as the mind was clear, then thought of strychnine, owing to the twitching of the muscles, but the heart symptoms did not correspond. I did not give an emetic owing to his weak condition, and because three-quarters of an hour had elapsed since the medicine was taken. After repeating the ammonia and whiskey several times and giving digitalis, which had now come to hand, the symptoms in the course of an hour grew better, and the family physician with another doctor now arrived. On inquiry the doctor said he had ordered 2½ minims each of tincture of nux vomica and tincture of cannabis indica, and 20 minims of dilute phosphoric acid in tincture of cinchona.

We then concluded the druggist must have made a mistake. I withdrew shortly after; the family physician remained during the night, and stated that the patient talked in a rambling way until midnight, with short intervals of sleep, after which he dozed lightly till morning. On going to the pharmacy we found the prescription to be as follows: "Acid phosphoric. dil., tr. nux vomica āā ʒj, tr. cannabis indica ʒvj, elix. calisaya ʒvj, syr. prun. Virg. ad ℥iij. S. one teaspoonful three times daily." The druggist had made no mistake. The cannabis indica was the cause of the symptoms. The doctor ordered the drug on the basis of the American Pharmacopœia, which directs the tincture to be made from the powder, while the prescription was put up on the basis of the English Pharmacopœia, in which the tincture is made from the extract and is much stronger. The English drug is more stable than the American, and here, where the drug comes directly from India, it is still better. The teaspoon used held more than a drachm, so that the patient must have taken at least the equivalent of one grain of the extract. It probably would not have produced such dangerous effects had the patient not been of a nervous disposition and much weakened by the influenza.

The heart failure shown in this case is not mentioned in the text-books as a symptom of hemp poisoning. It is curious that the drug did not act as a hypnotic, and that it did not produce that apparent prolongation of time that is ordinarily spoken of. Great weakness remained, especially of the lower extremities, so that he was a week regaining the condition that he was in before the poisoning.

The above proves that it is important:

1st. To follow the repeated warning given in the text-books that such a drug should be first used in minimum doses and increased as indicated.

2d. That toxic drugs should not be prescribed in a foreign country unless one is familiar with the strength of the preparation according to the Pharmacopœia of that country.

3d. That we should not prescribe a dangerous drug when there is no indication for it.

S. P. GLOVER, M.D.

BEYROUT, SYRIA.

MEDICAL.

Salicylate of Sodium in Typhoid Fever.—In THE MEDICAL NEWS of December 14, 1889, Professor George L. Peabody, writing on typhoid fever, says: "It would seem that any one possessed of facts bearing upon the subject, need offer no apology for presenting them to his brethren," and as my mode of treatment is altogether different from any other method that I have seen described, and is gratifying in the extreme, I here present it for acceptance or criticism.

Living in a small town, and doing an extensive country practice, it is impossible to take the temperatures of my patients at stated hours, for they are frequently ten miles apart.

During the past year I have treated about twenty cases of typhoid fever, with but one death. This patient, a lady, of thirty-five years, had taken large and repeated doses of podophyllum for ten days before sending for me. She died of intestinal hæmorrhage soon after I saw her. Four cases were children, between five and ten years old, the remainder adults. To the latter I gave daily twelve grains of the salicylate of sodium every two hours until four doses were taken; this amount (forty-eight grains) reduced the temperature promptly in every case save one with hepatic symptoms, who received ten grains of calomel in two doses. After the function of the liver was reëstablished in this case the salicylate was, for a few days, efficient in controlling the fever. Afterward it seemed advisable to assist its action with spirit of nitrous ether. If the skin is hot and dry, the sodium salicylate produces free diaphoresis in from one-half to one hour after the first or second dose. The pulse becomes softer

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and diminished in frequency. It is occasionally necessary to give a few doses of fifteen grains each, but this amount should not be continued, as such large doses cause symptoms of depression. To some patients I gave four drops of the tincture of digitalis every four hours, to prevent cardiac depression. Turpentine was applied to the abdomen of each patient, and was rubbed upon the legs, soles of feet, arms, shoulders, or lumbar region when aching in the limbs or back was complained of. In a few cases, where tympany was marked, ten drops of turpentine were given every five or six hours. When diarrhœa was excessive I gave the following mixture:

Tincture of myrrh		1½ ounces.
Tincture of capsicum		½ ounce.
Tincture of catechu Tincture of opium	of each	1 " —M.

One teaspoonful every two or three hours.

Calomel, in my opinion, is not indicated unless so-called bilious symptoms are present. In such cases it is useful, but if given *late* it is potent for harm, and I should hesitate to give it after the tenth day. Cold or tepid water should be applied to the hands and arms if fever be high, and the back may be sponged and fanned if the patient experiences no discomfort from it.

The diet should be restricted to milk, or meat broths containing a small amount of farinaceous substance. An enema of warm water, or a suppository of soap, is sufficient to move the bowels if they become constipated, but they should not be used oftener than every fourth or fifth day.

With the above treatment I have never seen the fever continue longer than eighteen days, and have often limited it to less, and even aborted it entirely. If quinine be a specific for intermittent fever, I believe that salicylate of sodium is for typhoid fever. A child of one year can take two grains; of five years, five grains; and of seven years, ten grains.

Given as above it will control fevers, and why it has not been used before cannot better be explained than in the language of Professor William Goodell, who says: "Truth evolves slowly, and does not, like Aaron's rod, bud and blossom in a night."

W. T. SPEARS, M.D.

RUTLEDGE, GA.

HOSPITAL NOTES.

TREPHINING THE SKULL FOR EPILEPSY. EXCISION OF A SPINA BIFIDA. EXCISION OF AN EXOSTOSIS OF THE FEMUR. DOUBLE CASTRATION.

Abstract of a Clinical Lecture delivered at the Roosevelt Hospital, New York.

BY CHARLES McBURNEY, M.D.,
ATTENDING SURGEON.

CASE I.—The first case for operation was one which had been sent by Dr. M. Allen Starr. The patient, a man thirty-one years of age, fell from a moderate height when nine years old, and received a scalp wound on the left side of the head near the junction of the parietal and occipital bones, two inches to the left of the vertex. No more serious injury was discovered at that time and the wound healed without the development of any cerebral symptoms. For the next fifteen years his health was excellent, when he was suddenly seized on awakening from a nap with a violent epileptiform convulsion. This was the first convulsion he had ever had, and it came without premonition. Convulsions then recurred at intervals of about a week, but they rapidly increased both in frequency and severity so that recently he has had as many as thirty or forty every month. The attacks begin by an uncomfortable sensation in the epigastrium which is quickly followed by entire loss of consciousness, twisting of the head and shoulders toward the left, and then a general convulsion of the muscles of the whole body. The attacks usually last fifteen or twenty minutes and are sometimes followed by very violent delirium. He has received for a long time the usual medicinal treatment for epilepsy, but without any benefit. Examination showed a slight scar on the left side at the site already mentioned, and some inequality of the bone underneath. Pressure on the scar caused a muscular tremor all over the body.

His case seemed to be a favorable one for operation: (1) Because the frequency and severity of the seizures were like those often seen in traumatic epilepsy; (2) the treatment for ordinary epilepsy had proved ineffectual; (3) the increasing frequency of the attacks indicated a direct source of irritation; and (4) on account of the peculiar effect of pressure upon the scar.

A curved incision was made so as to expose a large area of bone. The bone anteriorly showed only a slight groove, and posteriorly a very superficial circular depression. A button of bone was removed by trephining from both of these situations, and the bone cut away so as to unite these two openings. There was no evidence of injury upon the inner surface of the bone, but the dura bulged markedly into the opening. After incising the dura palpation of the brain showed it to be much softened over an area about one and one-half inches in diameter. The softened portion was removed with a sharp spoon and by sponging, and beyond this on all sides the brain appeared normal. Two small rubber drainage-tubes were inserted and a portion of the wound sutured with catgut. The remainder of the wound was packed with iodoform gauze and a large antiseptic dressing was applied.

CASE II.—A woman with a rather puzzling cystic tumor of the buttock was next presented for operation. According to her statement the tumor made its appearance about seven years ago, and, she thought, was the result of a blow. It grew rapidly to about the size of a lemon, when it was removed by operation; but within a year returned. The tumor was at present the size of an orange and was situated just over the base of the sacrum. Its size varied greatly with the position of the patient, so that Dr. McBurney suspected that it might be found to arise from the pelvis.

An incision was made over the tumor and a little dissection showed that the cyst passed into the sacrum through a foramen in the median line measuring about one and a half inches long by one inch broad. Finding it to be a spina bifida the dissection was carried down until a pedicle about the size of a goose-quill was reached. It was then ligated at this point with catgut and excised. Though the patient was positive that there had been no tumor in this region before her twenty-

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fourth year, Dr. McBurney thought that a small spina bifida had probably always existed, and that its growth had been more rapid after the injury. A rubber drainage-tube was inserted and the greater part of the cavity closed by buried catgut sutures. The antiseptic dressing was applied and retained by a double spica bandage.

CASE III.—The next patient was a girl twelve years of age, who had an exostosis on the inner anterior aspect of the femur, projecting about one and one-half inches from the bone, just above the junction of the epiphysis and the shaft. These exostoses occur almost invariably in young people, and very commonly in the locality indicated, probably on account of the great activity of bone growth at that point. It had given her only slight inconvenience, but any traumatism of the part would readily lead to troublesome inflammation of the bursa situated in front of the bony projection.

The base of the exostosis was exposed by an incision, and was then removed, together with the surface of the shaft on which it was implanted, by means of a chisel. If a part of the shaft had not been removed recurrence would be probable. Drainage for the first two days was thought necessary, and the limb was bandaged to a straight posterior splint provided with a foot-board.

CASE IV.—Dr. McBurney then presented a man with tubercular degeneration of each epididymis, which was rapidly advancing, although the spermatic cord on each was still free from disease. There were no evidences of tubercular deposits in the lungs or elsewhere. Dr. McBurney proposed to perform double castration with the object of preventing the advance of the disease along the cord and vas deferens to the bladder, prostate, and surrounding parts. He has never seen any ill-effects from removing organs so diseased, although some operators claim that disease in other parts of the body would be produced by such surgical interference. On the contrary, it has been his experience that where the disease has not advanced too far, the removal of such suppurating foci, whether in this locality or elsewhere in the body, is invariably followed by improvement.

MEDICAL PROGRESS.

Technique of the Porro-Cæsarean Operation.—In an address before the Southampton Medical Society, MR. LAWSON TAIT gave the following clear description of the various steps of the Porro-Cæsarean operation: The instruments required are two or three pairs of catch forceps for arresting bleeding points, a small sharp scalpel, two or three bayonet-pointed suture-needles, some silk, a piece of India-rubber drainage-tube, and two needles of steel wire, and none better than the ordinary stocking-knitting needle can be found. A *serre-nœud* may be added, but it is not in the least degree necessary.

The first step in the operation is the abdominal incision, four inches in length, involving the skin and muscles down to the sheath of the rectus, all of which ought to be divided by a sharp knife at one stroke; then the tendon of the one or other of the recti is opened, the muscular tendons fall aside, and the posterior layer of the tendon is nipped by two pairs of forceps and divided between them. The extraperitoneal fat is treated similarly, then the peritoneum is raised by two pairs of forceps, a slight notch being made between them. The moment this is effected air enters, and all behind falls away. No director is required, nothing but an observant pair of eyes, lightly applied forceps, and a sharp knife delicately applied. The finger is then introduced into the peritoneal cavity, and the relations of the uterus and bladder exactly ascertained. The peritoneum is then opened to the full extent of the four-inch incision, and the cut edges are seized on each side by a pair of forceps and pulled to their respective sides. No better retractors can be employed.

The piece of India-rubber drainage-tube, about eighteen inches or two feet long, is now held as a loop between the fore- and middle-finger of the left hand, slipped up over the uterus and pulled down over the cervix, passing the fingers behind the cervix to see that coils of intestine are not included. One hitch is then made on the tubing when it has been placed as far down as possible, and it is pulled as tight as is consistent with safety. The second hitch may be made in it, but what is far better, an assistant keeps the tube on the strain, so that the one hitch will be quite enough.

A hole just large enough to admit the finger is then made in the uterus; if it is possible, the position of the placenta may then be ascertained; if not, the right fore-finger is inserted, and between the two, by gentle rending, a larger aperture is made in the uterus, and the leg of the child is seized. The fœtus is then carefully delivered feet first, which, despite all authorities to the contrary, is by far the best proceeding; less blood is lost, and it requires but very gentle manipulation to relieve the head.

As soon as the fœtus is removed, the placenta is sought for, and removed in a similar manner. The uterus itself, being then completely contracted by this time, is pulled out of the wound, and the elastic ligature is tightened once more, and the second hitch is applied. The main details of the operation are now completed; all that is required is to pass the needles through the flattened tube and the uterus, and out at the other side, forming a St. Anthony cross, or two parallel bars, to support the weight of the uterus and the stump, and to keep it outside the wound. A complete toilet of the peritoneum is then made, not forgetting the anterior vesical *cul-de-sac*, and stitches are passed in the ordinary way to close the wound accurately round the uterine stump.

The uterus is now removed close down to the needles and strangulating rubber tube, leaving a little tissue above. A little perchloride of iron is then rubbed gently over the surface of the stump; it is dressed with dry lint and some cotton gauze, an ordinary obstetric wrapper is put on, and the operation is at an end.—*British Medical Journal*, March 22, 1890.

The Treatment of Typhoid Fever by Prolonged Immersion.—At the close of a lecture upon the above subject (*Lancet*, March 29, 1890), DR. JAMES BARR drew the following conclusions: 1. So long as the fever is mild there is no necessity for interfering with the temperature, and there is more to be lost than gained by attempting to produce continuous apyrexia. In continued fevers with a persistent high temperature and no marked intermissions, there is no period for building up tissue, and hence it is important to moderate the intensity of the pyrexia,

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and, if possible, produce a prolonged daily remission, with a reduction of temperature to at least 100° or 99°. The reduction should be obtained not only by abstracting heat but by limiting its production, and this is the action of baths.

2. Immersion causes a marked improvement in the vaso-motor tone; the bloodvessels become smaller, the pulse slower, fuller, and of improved tension. The heart maintains its vigor, and the only cases in which the sounds have become weaker were those which were not put in the water until a late stage of the fever.

3. The respirations lessen in frequency; the bronchitis and congestion of the lungs improve, and soon disappear.

4. The improvement is, perhaps, more marked in the digestive tract than anywhere else. The tongue becomes moist and clean, salivary secretion increases, appetite and digestion improve, and the diarrhœa not only lessens, but the character of the motions changes for the better.

5. The effects on the nervous system are excellent, delirium disappearing, and the general well-being of the patient improving.

The Treatment of Laryngeal Tuberculosis.—DR. J. NEUMANN has communicated to the Royal Society of Physicians of Buda-Pesth an account of his experience in the treatment of laryngeal tuberculosis. A solution of one-half per cent. of sulphate of zinc, mixed with one to two per cent. of cocaine, was useful in catarrh of the larynx and trachea in tuberculous patients. Sixty cases of extensive tuberculous ulcers of the larynx were treated with insufflations of iodoform, with the result that the ulcers became clean and partly covered with epithelium. No cure, however, was obtained. The anodyne effect of the iodoform on tuberculous ulcers was often surprising. A rather large quantity of the powder should be insufflated. Iodol, mixed with equal parts of boric acid, was a milder application, which had proved serviceable in 300 cases. A twenty per cent. oily solution of menthol was not well borne, and had no great effect. In the final stages of the disease the application of from five to fifteen per cent. of cocaine was useful, especially as enabling the patient to swallow with comfort. Eight minutes after the third brushing, he began with antiseptic insufflations in order to make the effect more complete. Morphine mixed with pulverized acacia, or iodol-boric acid, was used more rarely. Ice poultices and ice pills also effectually relieved pain. Of fifty patients treated with lactic acid, three remained well for a long time, while about thirty were relieved to a certain extent, but relapsed and died. The lactic acid was never hurtful, but was only useful in ulcers. Circumscribed infiltrations must be scraped away with the sharp spoon, if the patient is strong enough to bear it. In advanced ulceration, severe treatment should not be employed. With regard to tracheotomy, Dr. Neumann shared the opinion of Schmidt, that the favorable effect of the operation is due to the increased inhalation of oxygen and the rest given to the diseased organ. Of eleven patients operated upon, six died, four of whom were *in extremis* when admitted; five remained alive. One of these patients had now been under observation for two years, and another for one year.—*British Medical Journal*, March 29, 1890.

Camphoric Acid in the Night-sweats of Phthisis.—Camphoric acid, which is produced by the oxidation of camphor by an acid, has been given by DR. LEU (*Wiener medicinische Blätter*) to thirteen patients suffering from night-sweats—fifty-five doses in all. Perfect success was obtained in sixty per cent. of the cases; partial success in eighteen per cent. The average dose was thirty grains, although in some cases this dose was increased to forty-five or even seventy-five grains, thirty-five to forty-five grains being given in the evening, and about thirty grains in the middle of the day. A remarkable fact was that sometimes the favorable influence of the camphoric acid was not noted until the evening after its administration, while, further, the good effects persisted for several successive evenings. In order to make a comparison with a remedy which possesses great repute in the treatment of night-sweats, the author administered atropine to six different cases in twenty-four instances, alternating each evening with camphoric acid. It appears from these experiments that perfect success was obtained in but forty-two per cent. of the cases treated, atropine thus falling below camphoric acid in efficacy; while, further, even in the cases which were favorably influenced by the atropine, the duration of the effect was not to be compared with that of camphoric acid. Moreover, the after-effects of camphoric acid are quite insignificant, which cannot be said of atropine. In some cases the patients attributed a certain amount of soporific effect to the action of camphoric acid, although this, perhaps, was attributable to the fact that the suppression of the sweat removed a cause which ordinarily would tend to disturb sleep. The author has also made a number of experiments upon the effects produced by the external application of alcoholic solutions of camphoric acid. In one patient, who suffered from marked local sweatings, the substance was locally applied, and seemed to be extremely efficacious.

Though the drug has not a very unpleasant taste it was given by Dr. Leu in capsules.—*Therapeutic Gazette*, April 15, 1890.

The Significance of Albuminuria.—DR. GOODHART, in a paper read before the Harveian Society of London, detailed his observations upon 272 cases of albuminuria which had come under his notice in the past ten years. He called special attention to a form of congestive albuminuria, in which the patient complains of a certain amount of ill-health, whilst on inquiry it is found that he eats and drinks too much, takes no exercise, and probably has gouty antecedents. The urine in some cases is of high specific gravity, and contains only a small amount of albumin. The treatment of such cases consists in the periodical administration of a purge, and in making the patient live according to the ordinary laws of health. Such cases are clearly not due to nephritis. A temporary albuminuria in females may sometimes be explained by the fact that the urine has become mixed with leucorrhœal discharge, whilst in the male the seminal and prostatic secretions may produce a similar result. In cases where albuminuria follows scarlatina, and is therefore presumably due to nephritis, and the patient continues in good health, Dr. Goodhart thinks the phenomenon is to be explained by supposing that each organ has a margin of working power which can be

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temporarily encroached upon without bad results. Dr. Goodhart considers that slight and transient albuminuria in a young person is of very little importance, but if the quantity of albumin is large, if it is persistent, or if it frequently reappears, it must be regarded as a danger signal, and is, in some cases at least, due to patches of inflammation in the kidneys.—*Practitioner*, April, 1890.

Menstruation after Oöphorectomy.—The question of the cause of menstruation continuing after removal of the ovaries is still an open one. DR. ENGELMANN (*Annals of Gynæcology and Pædiatry*, April, 1890), after a study of the subject, concludes:

1. That the continuance of menstruation after removal of both ovaries is due to remnants of ovarian stroma left *in situ*.

2. That particles of ovarian tissue, however small, which remain after the removal of the greater portion of the organ, whether or not the Fallopian tube be preserved, *may* retain their activity and continue the functions of the entire organ, and from this we infer that menstruation is more or less intimately associated with ovulation, and that the menstrual condition indicates the ovarian status, provided the uterine tissues be normal in character.

3. That even elongated pedicles may contain ovarian stroma in which the functional activity of the organ may be continued.

4. That remnants of ovarian stroma do not *necessarily* preserve their vitality and functional activity.

5. That the ovary is an essential factor in the functional life of woman, and that menstruation is inseparable from ovarian activity, if not from ovulation.

The deductions of practical value to the operator are as follows:

1st. If menstruation is to be checked and the change of life produced, it is requisite that every particle of ovarian stroma shall be removed, if the result desired is to be expected with certainty.

2d. If shrinkage of fibroids, limitation of hæmorrhage, or cessation of annoying symptoms is to be accomplished with the greatest possible certainty, both ovaries must be *completely* removed.

3d. In the performance of double ovariotomy in women not beyond the climacteric, and not suffering from uterine reflexes, such healthy ovarian tissue as may exist should be spared in order that functional activity may not be impaired.

The Therapeutics of Codeine.—DR. LOWENMEYER, of Berlin, reports his results with the use of codeine (*Internationale klinische Rundschau*, April 6, 1890) in 400 patients, in some instances the drug being given for a considerable period. The effect in many painful conditions, such as gastralgia and colic, was most satisfactory, pain being subdued and the patient falling into a sleep. It was difficult to determine what kinds of pain were most favorably influenced by codeine, but it was apparently of least benefit in cases of very severe paroxysmal pain, such as gall-stone and nephritic colic.

In such affections of the respiratory organs as phthisis, pleuritic pain, bronchitis, and pneumonia, good results were obtained from codeine. It also rendered excellent service in asthma. The author's experience shows that it may be given without fear where there is cardiac disease. The doses employed by Lowenmeyer varied from ½ to ¼ grain.

Fluoresceïn in the Diagnosis of Corneal Lesions.—DR. R. L. RANDOLPH, in the *Johns Hopkins Hospital Bulletin*, April, 1890, details his results in the diagnosis of corneal diseases with fluoresceïn, as described by Dr. Straub, who states that corneal abrasions are temporarily stained a deep green by solutions of this compound.

Fluoresceïn is a red powder, soluble in water, and is one of the products of coal-tar distillation. Dr. Randolph employs a solution of 10 grains of the powder to the ounce of water, to which are added 15 grains of the bicarbonate of sodium.

He has never known the solution to have an irritating effect, and has used it in the most intense forms of corneal inflammation. The portions of the cornea stained retain the color from half an hour to several hours. The solution produces not the slightest impression upon the healthy cornea. He always found that when positive defects in the corneal epithelium existed—in other words, where there was actual loss of substance—the coloration was more apparent. So long, then, as it is possible to color any portion of the cornea, we may be certain that some lesion still exists. In excoriations of the cornea positive results were the rule. In ulcers of the cornea positive results were always obtained and in simple superficial keratitis the coloration was much less distinct than when this disease was associated with an ulcer. In parenchymatous keratitis the results were invariably negative. In foreign bodies in the cornea, no matter how small the foreign substance was, its position and size were located to a nicety. Here the coloration was immediate and distinct, showing itself by a green ring just around the foreign body. He thinks that when one is accustomed to the use of the solution—in other words, understands that where the coloration is produced the anterior epithelium is involved—the agent is of value in detecting, with accuracy, lesions of this part of the cornea. Ulcers so small that it is impossible to see them by diffuse daylight are brought out with perfect distinctness, quite as clearly indeed as under oblique illumination, and small points, which it is possible to overlook even with the oblique illumination, are invariably revealed by a drop of the solution; and, moreover, in half the time that it takes us to subject a patient to the former method. In minute ulcers of the cornea in very young children, where the blepharospasm and photophobia are frequently so intense that the lids have to be forced apart in order to get a view of the eyeball, and then the latter is rolled about so continuously, and the cornea flits so rapidly before our eyes that we are obliged simply to infer from the attendant symptoms the nature of the trouble without actually seeing the lesion itself, a drop of the solution will locate the disease and its extent, and bring it out distinctly so that it can be seen, no matter how fast the eyeball moves about.

Test for the Purity of Woollen Garments.—According to the *Sanitarian*, the genuineness of woollen clothing may be tested by placing a small fragment in caustic soda, which quickly destroys animal fibres, but has no effect upon those of vegetable origin. If the article is all wool it will be completely dissolved; if it has a groundwork of cotton the latter will remain.

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THE REVISION OF THE PHARMACOPŒIA.

ON the 7th of next month the Convention for the Revision of the United States Pharmacopœia will be convened in Washington, and, while we have already called the attention of the profession to the importance of a full delegation of medical men being present, we wish to reiterate the facts which have been already presented, and to offer additional reasons why everyone should go who has received the proper qualifications.

In the first place, the United States Pharmacopœia when arising from the intellect of but a few persons coming from a very limited territory, many of them having peculiar ideas, can in no way represent the opinion of the professions of medicine and pharmacy throughout the United States. Anyone who will glance at the Pharmacopœia of 1880 will notice that it contains some drugs which are exceedingly local in their use, and which perhaps are not employed anywhere out of the county, or at least the State, in which they are grown. It will also be found that remedies which have a much wider use do not appear; and more than all, that the measures for the manufacture of many of the pharmaceutical preparations are impracticable in the hands of the ordinary pharmacist.

We have also called attention to the immense variation which occurs in the strengths of tinctures and fluid extracts, and we have but recently seen a case in which belladonna was given, obtained from one store, without any effect, while that obtained from another store was too powerful in its influence, and occasioned decidedly unfavorable symptoms. It is evident that if the practice of medicine and pharmacy is to be based on scientific ground, better directions than the use of so many ounces or parts of a crude drug and so many parts of alcohol must be resorted to; since plants of the same species, growing under different circumstances in regard to heat, moisture, and soil vary, as everyone knows, very considerably in their external appearance, but even more so in the quantity of their active principles.

Unfortunately for the cause of standardization of drugs, a number of the members of the medical and pharmaceutical professions have obtained the idea that the movement is for the benefit of a well-known firm of manufacturers of medicines, and that this measure is calculated to be solely beneficial, from a commercial standpoint, to the members of this firm. Nothing can be more unjust or absurd, since the opponents of standardization virtually acknowledge by this outcry that their preparations are not standardized, for if they were, no objection would be made on their part to the movement. By the bitter opposition which some journals exhibit, the fable of the dog and the bone is exemplified; for, in their endeavor to prevent standardization by denouncing the only firm using standard methods, they give their opponents an advertisement and indorsement than which nothing could be further from their wishes, and which has already caused a number of physicians in this city to order only those drugs made by the one firm in dispute. We cannot help feeling, however, that the adoption of the term used at present by any single house to designate standardized drugs is entirely out of place, and we think that the word "standard" or "assayed" is the word to be employed.

CHRONIC PLEURISY AND EMPYEMA.

INFLAMMATION of the pleura is an important subject, both by reason of its frequency and of the serious complications, or sequelæ, that may attend it. That "busy practitioner," for whom so much compressed and sugar-coated literature is nowadays manufactured, is too apt to pass by unread, contributions on so old and familiar a theme, unless, perchance, his eye be taken by the formula of a never-

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failing prescription. Yet, as LIEBERMEISTER, in his recent valuable series of articles (*Deutsche medicinische Wochenschrift*, 1890, Nos. 10, 11, 12, 13), observes, "physicians whose resort to percussion is infrequent, may for many weeks together treat a patient for gastric catarrh, while in reality he suffers with an extensive pleural effusion;" for the symptoms of chronic pleuritis are indefinite and often misleading. Fever is slight, or, indeed, absent. Cough may be wanting. The phenomena, and especially those of pain and discomfort, due to pressure upon, and displacement of, neighboring organs by the distended pleural sac, are open to complete misinterpretation. Only by careful physical examination is the true nature of the case made evident; nor are the results of physical examination, while usually conclusive, absolutely beyond possibility of mistake in all cases. The diagnosis, then, is not a matter of such plain sailing that everyone may assume to know perfectly all the ins and outs of the channel, so soon as he has received his pilot's certificate. In those cases where the intrapleural effusion persists or recurs after subsidence of the more prominent symptoms of an acute attack, mistake is less likely to occur than in the not uncommon cases where the affection is, from the outset, sluggish and ill-defined. The patient, in this latter class of cases, most frequently comes under observation late in the progress of the disease, and has no history of acute distress in the thorax to direct attention to that region. In our own dispensary experience, moreover, even when cough and dyspnœa are so marked in cases of chronic pleurisy that superficial examination of the chest cannot be omitted, it is not rare to find that such diagnoses as asthma and consumption have been made. Especially is the case liable to be mistaken for pulmonary tuberculosis, when the effusion is purulent and irregular chills and fever form part of the clinical picture. Hydrothorax from passive transudation, as in cardiac and renal disease, may sometimes be difficult to discriminate from effusion the result of chronic inflammation of the pleura. In the former, however, the effusion more readily shifts its place with change of body-posture, being thinner and unhindered by adhesions. Hence, too, the line of the upper level of dulness is horizontal, while the corresponding line in cases of pleuritic effusion is more usually curved. Further, hydrothorax is almost invariably bilateral, while pleurisy is more frequently unilateral. Hydrothorax is rarely the only manifestation of a systemic process, but is associated with ascites or general anasarca. Nevertheless, as Liebermeister points out, the two conditions may coexist as complications, or there may be transition from one to the other. For example, effusion due to neoplasm may be called chronic pleurisy with as much propriety as inflammatory hydrops. Or if, after the disappearance of a general hydrops, some obstinate residue be left in the pleural cavity, it may be considered as certain that we have been dealing not merely with a simple transudation, but with an inflammatory process as well. If the fluid be drawn off, it may be considered non-inflammatory when it contains no fibrin, is of low specific gravity (1014 or less), and is feebly albuminous (2½ per cent. or less of albumin). If, however, it contains 4 per cent. or more of albumin, or the specific gravity reaches 1018, it is of inflammatory origin.

Empyema may follow acute or chronic pleurisy with sero-fibrinous exudation, in which a constantly increasing number of round cells is developed, gradually converting the whole into a purulent exudation. In particular, this result may quickly follow when through any means—for example, a paracentesis not made aseptically, or during the performance of which, air is allowed to enter the chest—pyogenic microbes are introduced. Suppuration often occurs, however, without ascertainable extraneous infection, and in many cases the pleuritis assumes from the first a purulent form. The latter condition, according to Liebermeister, is by no means so uncommon as recent writers assert. It occurs in traumatic disease, when the thorax is penetrated and air or foreign bodies enter the pleural sac; in inflammation following suppurative processes in neighboring structures, whether through perforation or extension by continuity of tissue; in the pleuritis of pyæmia or puerperal fever, whether as a sequel to metastatic abscesses in the lung or without the development of such abscesses; in variola and scarlatina, and, less often, in other similar infections. Finally, in the form which accompanies pneumonia, the exudation is so frequently purulent from the first, that ground is given for the opinion that the same microbe which excites the pulmonary inflammation is the direct cause of the accompanying pleurisy. In children, as is a matter of everyday observation, purulent pleural exudations are more common than in older persons.

Concerning physical diagnosis, Liebermeister can give us no means of discriminating between

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purulent and non-purulent effusions. Auscultatory signs, he believes, depend less on the qualities of the exudate than upon the condition of the bronchioles in the compressed lung. This accords with our own experience. In the absence of external evidence of abscess, or the formation of a fistula, the hectic fever, emaciation, and rational signs of suppuration suggest the diagnosis, and finally exploratory puncture confirms it. When the presence of purulent effusion is not detected, and the collection of pus is allowed to remain undisturbed in the pleural cavity, the consequences are serious, and, in the majority of cases, fatal. Penetration of pus into a bronchus with evacuation by cough, is said to be the least unfavorable route for spontaneous discharge. Penetration externally, with formation of subcutaneous abscess, however (*Empyema necessitatis*), is by no means an unmixed evil, for it has, in instances which have come under our own observation, led to incision of the fluctuating swelling in the back or side, and thus to the recognition and proper treatment of the previously unrecognized condition. Nevertheless, the practitioner who is not too busy to examine his patients, will not willingly trust the unassisted efforts of nature to secure evacuation of the pus, but will proceed to remove it as soon as he has made himself aware of its presence.

The questions as to the best method of operation, whether by puncture or free incision, and the details of the procedure; as well as those bearing upon the indications for removal of non-purulent effusions, demand consideration in another article.

LIKENESS AND UNLIKENESS.

THE shades of resemblance between the denizens of the various natural kingdoms are infinite, and it is this pleasing variety which stimulates the devotee of science to new research and prevents his work from being rendered stale by custom. It is this, also, which, in common with the "personal equation," leads to the greatest differences of opinion in every field of research and more particularly if the field is microscopic.

A recent number of THE MEDICAL NEWS contained an editorial on the effect of heat upon the red blood-corpuscles, and warned against the possible mistake of confounding the changes thus induced with those caused by the hæmatozoon malariæ. The article elicited a reply from a learned and distinguished *confrère*, who states that these effects of heat are well known to the expert, and are not likely to be misunderstood by anyone not a tyro.

When, however, it is recalled, first, that the number of experts in such matters is very small; secondly, that it took them a long time to confirm the observations of Laveran, and, thirdly, that one of the best known among them at first pronounced the malarial changes in the red corpuscles to be nothing more than vacuoles, it becomes evident that our warning, which was given for the benefit of all, and not for the few, was well timed.

REVIEWS.

A TREATISE ON MATERIA MEDICA, PHARMACOLOGY, AND THERAPEUTICS. By JOHN V. SHOEMAKER, A.M., M.D., and JOHN AULDE, M.D. 8vo., pp. 353. Philadelphia and London: F. A. Davis, 1889.

THE authors of this treatise have evidently struggled for originality, with a result which, to say the least, is somewhat peculiar. Their classification of drugs is exceedingly confusing, and in some instances misleading. For example, "alkaline or antacid medicines" are divided into (1) "direct alkaline remedies," including solution of potash and bicarbonate of sodium; (2) "direct, but not remote," including solution of ammonia, and, for some inexplicable reason, charcoal; and (3) "remote alkaline remedies," including salts of potassium and sodium with a vegetable base. Alum, sulphate of iron, perchloride of iron, oxide of zinc, oil of turpentine, creasote, and carbolic acid are placed in a list of the mineral acids, an innovation which we think demands an explanation. Digitalis is considered as a vascular sedative and grouped with aconite, hydrocyanic acid, tobacco, etc. On the next page we find a list of so-called "vascular tonics" (not vascular stimulants, which are elsewhere considered, with no mention of digitalis), among them acids, astringents, alcohol, iron preparations, ammonia, and digitalis *again*. Such a system, or rather want of system, cannot be other than confusing and discouraging to medical students.

Inaccurate statements show that the book has been either hastily or carelessly prepared. For instance, in discussing asthma it is stated that "Dr. Bosworth gives a tabulated account of eighty cases treated mainly by the insufflation of cocaine, and with marked success." Bosworth's eighty cases were *not* treated mainly by cocaine, but by cauterization, septum operations, removal of polypi, adenoid growths, etc. The authors probably had in mind a previous paper of Bosworth in which he said that intra-nasal applications of cocaine *relieved* the asthmatic paroxysms.

Another unfortunate feature of the treatise is the frequency with which the authors state their own beliefs dogmatically as facts, without qualification or supporting evidence.

The most useful sections are those upon alimentation and electricity, which are fairly complete and instructive. There are also interesting descriptions of hypnotism,

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earth dressings, climatology, and several other therapeutic agents not usually considered in text-books.

The book could have been greatly improved by judicious pruning, by closer attention to the rules of composition, which are sadly neglected, and by the avoidance of unnecessary digressions; and it is to be hoped that the authors will make these changes should the volume ever reach a second edition.

A TEXT-BOOK OF HUMAN ANATOMY: SYSTEMATIC AND TOPOGRAPHICAL, INCLUDING THE EMBRYOLOGY, HISTOLOGY, AND MORPHOLOGY OF MAN, WITH SPECIAL REFERENCE TO THE REQUIREMENTS OF PRACTICAL SURGERY AND MEDICINE. By ALEXANDER MACALISTER, M.A., M.D., F.R.S., F.S.A. Philadelphia: P. Blakiston, Son & Co., 1889.

THIS is, in many respects, a remarkable book, comprising as it does the outcome of modern scientific methods as applied to human anatomy. To the student interested in morphology and embryology it will be most valuable, as it embraces in all their essential details the facts pertaining to these departments of study in their relation to the various regions of the body considered topographically.

The thoroughness and perspicuity with which the whole subject is treated are impressed upon every page, and testify to the well-earned reputation of the author.

As a book of reference for the advanced student or practitioner, it will prove very useful; but to the beginner or ordinary student of medicine, it cannot be recommended as a text-book.

The endeavor to conform to the exact technicality of modern scientific expression and the substitution of new descriptive terms for older and less accurate ones, while it may be a satisfaction to the mind of the author, will not render the difficult study of anatomy any easier, unless it has been preceded by a more careful scientific training than most of our colleges afford.

The ordinary names of parts and distinctive terms, which long usage have rendered characteristic, are hard enough to comprehend and acquire, but have, by their very individuality, a power of arresting the attention of the learner, besides possessing the historic value to which Professor Macalister refers.

We would especially call attention to the chapter on *cranio-cerebral topography*, where, besides referring to the divergence of the angle between the Rolando-auricular and ecto-cantho-Rolandian lines, and similar typical expressions for determining the relations of brain surface and bone surface, the author makes the really important statements that "the relations of the convolutions to the surface markings are variable within many wide limits," and "that all systems of definite measurements must be taken with limitations." This is well worthy the emphasis put upon it, in refutation of the assertions not uncommonly met with in the medical writings of the day, by which the uninitiated would be induced to believe that any clever surgeon can put his finger over the exact spot where a cerebral lesion exists.

The illustrations are numerous, and—with the exceptions of those showing the bones and muscles—well chosen. The original diagrams are excellent.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Section on Pædiatrics.

Stated Meeting, April 10, 1890.

L. EMMETT HOLT, M.D., IN THE CHAIR.

DR. F. M. CRANDALL presented a urethral calculus which he had removed from a child three years old. Although the child had passed very little urine for seventy-two hours previous to the removal of the obstruction, the chief symptom for which the mother had sought advice was a continuous forcing down of the rectum. The calculus was situated one-fourth of an inch from the meatus.

DR. I. H. HANCE presented a renal calculus which had been removed post-mortem from a baby of twenty months, who had presented no symptoms of such trouble. There were no signs of pyelitis found. The question arose as to whether it was congenital, which the size of the stone seemed to indicate.

The Chairman reported two cases of

ACUTE PRIMARY PNEUMONIA IN INFANTS, WITHOUT FEVER.

In neither case were any of the usual symptoms of pneumonia present, and yet the post-mortem examination, both macroscopical and microscopical, showed the characteristic lesions of pneumonia.

DR. A. JACOBI said that the description of the microscopical appearances in these cases indicated that the pneumonia was not a secondary process. Pneumonia, with but little rise of temperature, was noticed in very young and in very old subjects, in young infants whose vitality had been impaired by previous disease, and in the cases with brain symptoms at the beginning of the disease.

The discussion on

THE USE OF SPIRITS AND MALTED DRINKS IN NURSING WOMEN

was opened by Dr. A. Jacobi. He said that a proper understanding of the subject necessitates a consideration of the nature of the mammary secretion, and the circumstances under which it might become mixed with drugs or other substances found in the circulation. It is well known that various substances of this nature have been found at times in human milk; but the results of such observations have often been conflicting. These discrepancies, however, can be reconciled by an application of our knowledge of the physiology of lactation. Milk, so far as its chief solid ingredients are concerned, consists of the transformed cells of the mammary glands. It contains a considerable quantity of potassium, phosphate of lime, a very little chloride of sodium with casein, milk sugar, and more fat than is found in the blood. If the change in the mammary epithelium is incomplete, the resulting secretion is not milk, but colostrum; and the condition of the gland itself influences the quality of the milk much more than any single article of diet. But the general health, emotional condition, and the period of lactation all profoundly influence the quality of the secretion, and may, by causing its deterioration, lead to an ad-

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mixture of the milk with transuded blood serum. This "transudation milk" often contains medicinal substances found in the circulation; and hence, a dose of opium which in the later months of lactation would have no effect upon the child, might, if administered immediately after confinement, while the colostrum is still being secreted, exert a dangerous influence upon the nursling. A similar state is induced by sudden and violent emotions. Applying this knowledge to the topic under discussion, it is seen that while the mammary secretion is of proper quality, alcohol might be taken without affecting the child in any way; but a deterioration of the milk might be accompanied in some cases by unpleasant symptoms referable to the alcohol which had been taken by the nurse. The literature of this subject is very scanty, and many of the modern observations lack scientific precision. In 1853 Becquerel announced as the result of a series of observations, that children of nurses who took alcohol freely exhibited somnolence, restlessness, and occasionally convulsions. Stumpf concluded, as the result of his researches, that the quantity of milk was not influenced by the presence of alcohol, and he added that he knew of only one remedy which would increase its quantity, and that was salicylate of sodium. This is in accordance with Dr. Jacobi's own experience with the effect of salicylate of sodium upon other secretions, notably that of the liver. He considers it the most reliable remedy in our possession for preventing the formation of gall-stones. He thought the use of alcohol by nursing women should be forbidden, except where there is a definite indication for its use as a medicine. Ordinarily, women require about 90 grammes of albumin daily, but when nursing, this amount increases to about 150 grammes; and the additional quantity is to be supplied by a liberal diet of meat and milk.

DR. E. L. PARTRIDGE was of the opinion that the quantity of milk could be decidedly increased by the use of malted drinks; and he thought this was brought about partly by the larger quantity of fluid ingested, and partly by its beneficial effect upon the maternal nutrition. He did not, however, approve of this "high-pressure nursing" any more than he approved of a broker sustaining his strength, amid excitement, by the use of tobacco and alcohol. Such nursing is likely to bring on functional disorders of the heart and pelvic organs, and it is entirely unnecessary in these days of improved artificial infant foods. Many women with deficient milk are improved by anything which they firmly believe is capable of rendering the desired assistance; and this knowledge can often be turned to good account to tide a nervous, apprehensive patient over a critical period. It is on this principle that he explained the good effect which he had observed to follow the use of a much-vaunted preparation. He believed its therapeutic virtues were to be found in the positive assurances of its efficacy, as stated on the label. There is no good reason for depriving those long accustomed to the use of malted drinks of their accustomed beverage, and there is no advantage in beginning the use of alcoholic drinks during lactation, except for medicinal purposes.

DR. A. SEIBERT said that in the discussion, so far, the *rôle* played by the bacteria found in alcoholic beverages had been entirely ignored. Many of the poorer classes drink large quantities of stale beer, which he had often seen affect the child very unpleasantly. It was his custom, therefore, whenever a child was taken sick with a gastro-intestinal disorder, to forbid the use of beer by the mother.

DR. E. H. GRANDIN has always been in the habit of allowing malt liquors to such nursing women as seemed to need a stimulant; and although he has had excellent opportunities for observing the effects of beer-drinking, he has never been able to trace any injury to the child from the moderate use of such liquors. He thought that both the quantity and the quality of the milk had been improved by such treatment.

DR. JACOBI, in closing the discussion, remarked that there seemed to be a pretty general agreement upon the statement that liquors were unnecessary, and for the most part injurious when used by nursing women; although they might be required as medicinal agents to aid in some cases in the digestion of the large quantities of carbo-hydrates necessary for the proper nutrition of the nurse.

CORRESPONDENCE.

SHORT-WEIGHT QUININE CAPSULES.

To the Editor of THE MEDICAL NEWS,

SIR: My attention having been called to the very evident short weight of some quinine capsules in the market, I determined to investigate the matter. I had believed that the present low price of quinine had removed all incentive to the placing of short-weight capsules on the market, but my investigations have convinced me that such capsules are even now offered for sale. Whether their existence is due to intentional fraud or to gross carelessness I cannot say, but I feel that the attention of the medical profession should be called to the existence of such capsules. These capsules were bought in the market in Detroit in original packages. Each package consists of a tin box, on the uppermost surface of which is a yellow label bearing the following: "Keep in a cool, dry place. Superior gelatin elastic capsules. Prepared from extra French gelatin. The drugs are the best that can be procured. Manufactured by the Merz Capsule Company, Detroit, Mich." On the end of the box is a small white label, bearing the following:

"106.—Quinine sulph. . . . 3 grains.
Capsicum . . . 1–3 grains."

I obtained four of these boxes, which I will designate by the numbers 1, 2, 3, and 4. In box No. 1 the capsules were not elastic, but were hard. This box contained originally 104 capsules. The short weight of these was easily determined. Twelve of the capsules, taken at random, weighed, gelatin and contents together, 1.858 grammes or 28.67 grains, or a little less than 2.4 grains each. There could be no doubt about short weight in these. The actual amount of quinine in each of 12 capsules was determined as follows: The contents of each capsule were placed in a weighed one-ounce Erlenmeyer flask. The gelatin was washed free from quinine with absolute alcohol, the alcohol added to the quinine in the flask, the alcohol evaporated at a low

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temperature, and then the flask, with its contents, was dried at 105° C. to a constant weight. The weight of the anhydrous quinine sulphate multiplied by the factor 1.193 gives the weight of crystallized sulphate, allowing 8 molecules of water of crystallization, the highest amount of water allowed by the U. S. Pharmacopœia. The following table will show the result of these determinations:

No. of capsule	Weight of flask.	Weight of flask and anhydrous quinine sulphate.	Weight of anhydrous quinine sulphate.	Weight of crystallized quinine sulphate.	Weight of crystallized quinine sulphate
	Grammes.	Grammes.	Milligram.	Milligram.	Grains.
1	16.616	16.664	48	57.3	0.88
2	15 310	15.355	45	53.7	0.83
3	13.162	13.200	38	45.3	0.70
4	16.350	16 395	45	53.7	0.83
5	14.405	14.458	53	63 2	0.98
6	11.525	11.567	42	50 0	0.77
7	13.193	13.250	57	68.0	1.05
8	17.408	17.445	37	44.0	0 68
9	12 247	12.299	52	62.0	0.96
10	14.901	14.945	44	52.4	0.81
11	12.248	12.297	49	58.4	0.90
12	13.540	13.594	54	64.4	0 99

It will be seen from the above figures that the average amount of quinine is less than one-third of that which the capsules are advertised as containing. So much for the quinine; how about the capsicum? The contents of several capsules were dissolved in water with the aid of dilute sulphuric acid, and *not the smallest trace of capsicum could be found.*

In box No. 2 the amount of quinine was found to be larger than in the capsules from box No. 1, but again no capsicum could be detected. The method of determining the amount of quinine was the same as given above, and in order to save space I will only report results:

Capsule No.	1 contained	. . .	2.28	grains.
" "	2 "	. . .	2.23	"
" "	3 "	. . .	2.28	"
" "	4 "	. . .	1.85	"
" "	5 "	. . .	2·48	"
" "	6 "	. . .	1.46	"
" "	7 "	. . .	2.03	"
" "	8 "	. . .	1.69	"
" "	9 "	. . .	2 47	"
" "	10 "	. . .	1.54	"
" "	11 "	. . .	1.50	"
" "	12 "	. . .	1.22	"

The capsules in boxes Nos. 3 and 4 contained capsicum, and the amount of quinine sulphate was determined as follows: Each capsule was placed in a clean one-ounce Erlenmeyer flask, 5 c.c. of distilled water, and 2 drops of dilute (1 : 5) sulphuric acid added. The flasks were then kept at 38° C. until the capsules had dissolved. The acid solution was then shaken with ether, and after separation the ether was removed and discarded. The contents of the flask were now rendered alkaline with a ten per cent. solution of sodium hydrate, and extracted twice with 25 c.c. of absolute ether. Ths ether was placed in weighed Erlenmeyer flasks and kept at 30° C. until the ether had evaporated, then heated at 105° C to a constant weight. The weight of the anhydrous quinine multiplied by the factor 1.3734 gives the weight of crystallized sulphate of quinine with 8 molecules of water of crystallization $(C_{20}H_{24}N_2O_2)_2H_2SO_4$, $8H_2O$.

Twelve capsules taken at random from box No. 3 contained the following amounts of crystallized sulphate of quinine:

Capsule No.	1 contained	. . .	2.62	grains.
" "	2 "	. . .	2.54	"
" "	3 "	. . .	3.01	"
" "	4 "	. . .	2.96	"
" "	5 "	. . .	2.43	"
" "	6 "	. . .	2 22	"
" "	7 "	. . .	1.93	"
" "	8 "	. . .	2.78	"
" "	9 "	. . .	2.39	"
" "	10 "	. . .	1.99	"
" "	11 "	. . .	1.95	"
" "	12 "	. . .	2.30	"

Twelve capsules taken at random from box No. 4 contained the following amounts of crystallized sulphate of quinine:

Capsule No.	1 contained	. . .	2.62	grains.
" "	2 "	. . .	2.57	"
" "	3 "	. . .	2.53	"
" "	4 "	. . .	2.17	"
" "	5 "	. . .	2 86	"
" "	6 "	. . .	1.65	"
" "	7 "	. . .	2.16	"
" "	8 "	. . .	3.01	"
" "	9 "	. . .	2.86	"
" "	10 "	. . .	1.76	"
" "	11 "	. . .	1.74	"
" "	12 "	. . .	1.63	"

It will be seen that, out of 48 capsules assayed, only 2 contained the amount of quinine claimed on the label.

Respectfully, V. C. VAUGHAN, M.D.

UNIVERSITY OF MICHIGAN, ANN ARBOR.

THE EFFRONTERY OF PROPRIETARY MEDICINE ADVERTISERS.

To the Editor of THE MEDICAL NEWS,

SIR: Two notable instances of the unscrupulous methods of pushing proprietary medicines have lately presented themselves which should be held up as a warning to those who permit their names to be used by advertisers.

A few weeks ago I received a folded card, which was widely distributed to the profession, on the outside of which was printed, in large capitals, "BELLEVUE HOSPITAL MEDICAL COLLEGE." This appeared like an official issue by the College. It contained the following: "The expressions of the Medical Profession regarding the efficacy of 'Vin Mariani' in therapeutics can be summarized as follows:

"As a tonic in laryngeal and gastric complications; as a diffusible stimulant in anæmia, nervous depression, melancholia, tardy convalescence, general 'malaise,' and in all those cases in which there is much depression and atony.

"Topically in convulsive cough, laryngitis, stomatitis, etc.

"We refer by kind permission to the following physicians, members of the Alumni of Bellevue Hospital College."

Then follow the names of 142 physicians residing in

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different cities. Like circulars were distributed with the headings, "Jefferson Medical College" and the "University of Pennsylvania," and I am told that the names of other reputable colleges have been used in the same way. However these signatures may have been obtained, I venture to say that no one of the signers imagined that his name would be used in a broadcast advertisement, apparently issued with the approval of the college from which he had been graduated. This advertisement should teach the profession a lesson of the danger of giving testimonials under any circumstances. In the first place, no reputable physician makes use of testimonials, this method of advertising being confined to charlatans. In the second place, few if any can testify, from their own knowledge, to the truth of statements with regard to proprietary medicines. I think, also, that the profession does not now regard it as safe to put in the hands of patients, for use according to their own judgment, preparations containing cocaine. As a matter of fact, the enterprise shown by the Mariani Company will probably prevent those whose names have been used from prescribing the "wine," and will have a like influence on the alumni of the colleges the names of which have been used.

The other instance of effrontery in advertising is in the case of the "Lactopeptine Medical Annual" sent as an advertisement by the "New York Pharmacal Association." In this remarkable publication are process-reproductions of photographs of some of the professors in the Bellevue Hospital Medical College. The New York Homœopathic Medical College, the Medical Department of the University of Pennsylvania, the American Medical College (Eclectic) of St. Louis, and the College of Physicians and Surgeons, of Chicago, are treated in the same way. These colleges are therefore presented as giving countenance to the "Lactopeptine" remedies.

The publication of my portrait in the "Lactopeptine Medical Annual" is my excuse for a notice of the claims for "Lactopeptine" as a therapeutic agent. It is advertised that "Lactopeptine contains the five active agents of digestion—pepsin, ptyalin, pancreatin, lactic acid, and hydrochloric acid—combined in the same proportion as they exist in the human system. These digestive agents comprise all known substances employed by nature in the preparation of food for assimilation."

Let it be assumed that the pepsin has been extracted from pigs' stomachs by the best methods, and even that the ptyalin is pure, which is very improbable. According to the best authorities, ptyalin acts only in a neutral, or an alkaline medium. It is destroyed by hydrochloric acid, or by digestion with pepsin. Lactopeptine contains hydrochloric acid, or, if the pepsin be active, the influence of ptyalin must be *nil*. There is no such substance as pancreatin. The digestive constituents of the pancreatic juice are amylopsin, trypsin, strapsin, and a milk-curdling ferment. It is difficult to imagine that all these are contained in lactopeptine. Amylopsin is supposed to be identical with ptyalin, and all conditions which affect the action of ptyalin have a similar influence on amylopsin. The protolytic action of trypsin takes place in an alkaline medium only, and never in the presence of acids. An artificial digestive agent containing hydrochloric and lactic acids and trypsin is an impossibility, so far as any action of trypsin is concerned. Strapsin is a very unstable substance, and nothing need be said with regard to its possible action or the action of a milk-curdling ferment, as these substances exist, if they do exist, in such a compound as lactopeptine purports to be.

Lactopeptine, so called, as an aid to digestion, is a physiological absurdity. Anyone who prescribes it in digestive disturbances, does so in opposition to universally accepted facts in physiology and sound therapeutic principles.

AUSTIN FLINT, M.D.

VIENNA.

To the Editor of THE MEDICAL NEWS,

SIR: There have been some changes in the medical faculty here that are worthy of mention. The famous physiologist, Professor Brücke, now more than seventy years old, has become tired of the strain of a professorship and has resigned. The faculty thus lose one of their brightest lights, for his name stands high in the annals of physiology. The faculty have selected Professor Exner, now extraordinary professor of histology, as his successor—subject to royal approval. Dr. Bueczasy, whom many Americans remember as Schnitzler's first assistant in laryngology, and who was one of our favorite teachers, has also resigned; it is said that he may conduct private courses on throat and nose later in the season.

At present there are two University clinics in internal medicine—Nothnagel's and Kahler's, and Parliament has decided to erect a third, with Schrötter as Professor and director. For the two surgical clinics—Billroth's and Albut's—more room is to be given in the spring.

One of the most interesting clinics here is Neuman's on skin and syphilis. He shows about six cases a day, has them stripped entirely naked, and standing on an elevated platform before the class. He shows men and women on alternate days, and gives excellent demonstrations, paying special attention to the genitals, and giving most of the men present a chance to examine each case. Neuman is very witty, and constantly joking with his patients. Partly because he is such an excellent teacher, and partly because he is popular, his courses are very well attended.

Professor Monti gives one of the best courses in Vienna on diseases of children. Though he speaks miserable German, he gives points of great practical value, shows very interesting cases, and demonstrates them in such a manner that children's diseases become a fascinating study. He states that of the 6000 cases annually treated in his clinic four-fifths are rhachitic, and as he has thoroughly tried the phosphorus treatment without satisfactory results, he condemns it. Hygienic treatment, with abundant fresh air, is the only means that he employs for relieving the disease. In croup he gives salicylate of sodium, quinine, or morphine *pro re nata*, but insists that shortening of the disease or a cure has never taken place. Last week he showed us a case of congenital pemphigus. The child was three months old and was literally covered with vesicles, the back being one huge blister, the heels and palms denuded of epithelium by the breaking of the vesicles, and the patient presented a horrible spectacle. It had pneumonia in addition, and showed all the signs of chronic dyspepsia.

Professor Reuss has a new method of treating kera-

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titis, based on the following reasoning: Atropine and all mydriatics contract the iris and increase intra-ocular pressure. Eserine and myotics lessen the intra-ocular tension. In keratitis if we can increase the blood-supply to the inflamed spot in the cornea we shorten the process and prevent its spreading; and by reducing intra-ocular tension we open the spaces between corneal layers and allow blood to circulate more freely. Hence in simple keratitis he always uses myotics. When, however, perforation threatens and iritis is a complication, he asks: Will synechiæ do more harm as regards the usefulness of the eye, in that particular case, than large *maculæ corneæ*, and on the answer bases his treatment. If the *maculæ* be in the centre, and a subsequent iridectomy gives better chances for good vision, he continues eserine, caring nothing about synechiæ; but if the *maculæ* be near the limbus, preservation of a good pupil becomes the leading indication, and atropine must be used. As an antiseptic for the corneal wounds, and when the inflammation has disappeared, he uses calomel or iodoform.

The Paris *Journal de Médecine* accuses Pasteur of issuing incorrect reports upon his work in hydrophobia. It states that he reports but eleven deaths, while the records show twenty-six, and that taking the real ratio of deaths to cases treated his results are no better than those of ordinary treatment. Dr. Rascol, of Murat, even accuses Pasteur of introducing the disease and directly causing the death of one of his patients. Two men had been bitten by the same dog at the same time. The more severely injured man was treated at home, was not inoculated, and recovered; the other was sent to Pasteur, and soon died of hydrophobia after the inoculation treatment. We hear nothing about Pasteur here now—a suggestive silence.

The Americans here have had many a laugh about the telegraphic reports in American papers, especially in the *New York Herald*, concerning the influenza bacillus. It is now settled that no new bacterium was discovered as a cause of influenza. There is no Professor Jollies in Vienna, so the wide-awake reporter was slightly mistaken, or perhaps the victim of a practical joke, and his whole story, as the *Herald* told it, was simply a newspaper canard.

It is another proof of how little reliance can be placed on telegraphic reports concerning scientific work.

There have been a number of rare and interesting cases here lately. A few days ago Albert operated for the removal of an ovarian tumor; there were all the physical signs of ovarian cyst, yet when it came to ligating the pedicle it was discovered that the growth was a true uterine cyst, not resulting from partial central necrosis of a fibroma. There are but few similar cases on record. Dr. Hochenegg, Albut's first assistant, also showed us a peculiar case. An old woman, whose son had died of tubercular caries, had nursed him during his illness and had scratched her finger on a spicula of diseased bone. This was two years ago, and now her index finger, the one then injured, shows a typical tuberculous ulcer. Along the dorsum of the hand and forearm there is a well-marked chain of hard lymphatics, the ducts are evident to touch, like strings, while the glands feel hard and as large as cherry-stones. It is strange that but one chain of lymphatics exists, and that in this case they should be so hard from tuberculosis, when generally tubercular infiltration causes degeneration. The etiology is so clear that an operation removing the finger and extirpating all the glands is advised.

Hochenegg has introduced a new operation into gynecology for removal of the uterus in severe cases of cancer. It is a modification of Kraske's operation for removal of the rectum from behind. He makes a crescentic cut with the convexity upward, from the left sacro-iliac synchondrosis to one inch to the right of the end of the coccyx. Cutting down to the bone and dissecting back the coccyx, about one inch of the latter is chiselled off. This gives a free opening for working on the rectum—so far Kraske's method. Now, Hochenegg goes in between the rectum and cellular tissue, pushing the former to one side, and thus reaching the uterus, which can, with the infiltrated tissues around, be easily extirpated. The great advantage is plenty of light and room for working, the ease with which hæmorrhage can be controlled and all the diseased parts can be seen and removed. Of course, the severity of the operation makes it advisable only when the neoplasm is so large and the infiltration so great that colporo-hysterectomy or laparotomy would not give sufficient room to remove the whole mass. He has operated in eight cases, in all of which operations were declared impossible by the gynæcologists here, and has had seven recoveries; certainly a brilliant result.

Professor Rydygier, of Krakau, has a new treatment for uterine fibroids, when the patients refuse to submit to oöphorectomy or excision of the tumor. He simply ties all the arteries entering the growth—of course, after laparotomy—and reports good results in several cases.

We had an interesting case in Nothnagel's wards last week. An old woman who had had a scirrhus of the breast removed ten years before, was perfectly well until several months ago. Since then she has gradually grown weaker, has noticed that she could not walk in the dark or with closed eyes, and that her legs were becoming numb and too feeble to carry her weight. In her legs sensation is perfect, the patellar reflex almost absent, muscular sense good; but voluntary motion markedly feeble. In her arms the reflexes are increased, motor power somewhat diminished, and muscular sense almost gone, so that when she closes her eyes motions with the arms are markedly ataxic. The eye reflexes are all present; there is slight facial paresis on the left side. She has excruciating pains in the spinal column. There is considerable cachexia, and on her back we found a number of hard nodules, which examination showed to be metastatic carcinomata. In the left axilla there is a bunch of hard infiltrated glands, and even in her lower limbs a few nodules exist. No known nervous disease will explain the symptoms of the case, so metastatic carcinomatous nodules in the spinal cord become a probable diagnosis. There are but very few such cases on record, and the excruciating pains in the column were present in all.

On the 14th of April the European Congress for Internal Medicine meets in Vienna, and a large attendance is anticipated, for many of Germany's best clinicians have announced papers and accepted parts in the discussions. Nothnagel is President.

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Another former assistant of Billroth has reached distinction. Dr. Mikulicz has been appointed successor to the famous Volkmann, at Halle. Other former assistants from this great Vienna clinic are Czerny, of Heidelberg, and Wölfler, of Graz.

NEW YORK.

First Annual Reunion of the Society of the Alumni of Bellevue Hospital.

To the Editor of THE MEDICAL NEWS,

SIR: This active and rapidly growing Society held its first annual reunion on April 8th, 9th, and 10th. The first session was in the evening, and was held in the Mott Memorial Hall. Dr. Charles Phelps presented a very thoughtful and earnest paper on "The Treatment of Simple Fracture of the Patella by Wiring," in which he spoke emphatically against what he considered the excessive conservatism which prevented the general acceptance of this method of treatment. The paper was based solely upon his own extensive experience with this operation. The paper was discussed by Drs. Abbe, Bryant, Dennis, Leale, L. A. Stimson, and Stephen Smith; all of whom acknowledged the excellence of the results obtained by Dr. Phelps; but they were about equally divided as regards the advisability of recommending it to the profession at large as the best method of treating this fracture.

On the morning of April 9th, the Society attended a clinic held by Dr. L. A. Sayre at Bellevue Hospital; and in the afternoon of the same day listened to a paper on "The Ultimate Results of Injuries of the Hip-joint," by Reuben A. Vance, M.D., of Cleveland, Ohio. The paper was discussed by Drs. L. W. Hubbard, R. H. Sayre, J. McG. Woodbury, and J. Ridlon; all of whom looked upon the cases described in the paper as cases of chronic hip-joint disease.

Papers by Drs. John Warren and Brandreth Symonds on "Transient Glycosuria," and "Delicate Tests for Sugar in the Urine," then followed.

These papers referred particularly to the bearing of this condition upon life insurance. There was a lengthy discussion, in which Drs. H. M. Biggs, A. Flint, G. B. Fowler, R. W. Greene, and W. H. Thomson participated. The weight of opinion was in favor of Fehling's test and the fermentation test as being the best for clinical guidance. Drs. Flint and Thomson considered more especially the physiology and pathology of this important but decidedly obscure subject of transitory glycosuria.

The exercises of the day were closed by a banquet held at the Hotel Brunswick, which was very largely attended. The President, Dr. Richard Kalish, delivered a short address, in which he related the circumstances connected with the founding of the Society, and then referred to its rapidly increasing membership, and its present prosperous condition.

Dr. William H. Draper responded to the toast "Old Bellevue," and referred to the days spent there as truly the happiest of his life. He spoke of the many great teachers there in his time, only two of whom, Drs. Barker and Sayre, were still living. He closed his remarks by bidding the Society drink in silence to the memory of "Those who died in the discharge of their duty." Rev. S. MacArthur, D.D., responded to "The Parson." He spoke of the power and influence wielded by a well-rounded character, and of the importance of a good preliminary, as well as a complete professional education. He said that this country must soon have a true University, which would probably be located in New York City. Speaking of the personal characteristics of "the parson" and "the doctor," he urged that both should be more careful to bring into the sick-room a flood of sunlight rather than gloomy forebodings. Dr. A. L. Loomis, in responding to "Progressive Medicine," remarked that it was a very hackneyed subject; but he treated it nevertheless in a novel manner, pointing out, as evidences of this progress, the higher fees now obtained; our less frequent wrangling with the homœopaths, who, in consequence, were busily engaged in cutting each other's throats; the use of trained nurses; and the establishment of gynæcology as a separate and lucrative speciality. "The Law" was responded to by Frank Loomis; "The Patient" by Charles B. Alexander; "The Press" by Chester A. Lord. President H. H. Porter, in responding for "The Commissioners," said that he had always endeavored, although often in the face of great obstacles, to advance the best interests of Bellevue Hospital. "Bellevue Hospital in its Relation to Medical Education" drew forth from Dr. Austin Flint the fact that as long ago as 1807 Bellevue Hospital was mentioned, and that in March, 1848, the new amphitheatre was opened, and the first clinic held in it by Professor Van Buren. After the establishment of the Board of Commissioners of Charities and Correction in 1860, the progress of the hospital was much more rapid. Many successful and brilliant men had been graduated from that institution; but he did not favor the extensive preliminary education demanded by some, as he thought such a provision savored of old educational ideas which were not applicable to the present times. Dr. William M. Polk then drew a vivid picture of the old-time Bellevue nurses, and contrasted them with the educated and skilful ones of to-day. He thought that they might prove a very important factor in case of pestilence or war.

This interesting series of meetings ended with a clinic in Bellevue Hospital given by Professor W. T. Lusk. An exploratory laparotomy was performed; and then a demonstration was given of Mr. Tait's operation for ruptured perineum.

NEWS ITEMS.

Niagara University Commencement.—On April 15th the Medical Department of Niagara University graduated a class of fifteen. This school has a three years' graded course.

Legacy to the New York Post-graduate Medical School and Hospital.—Among the legacies of the late Hon. Daniel B. St. John, of Newburgh, N. Y., was one of ten thousand dollars to the above-named institution.

Prostatic Operations.—Dr. William T. Belfield, 612 Opera House Building, Chicago, Ill., U. S. A., solicits information concerning unpublished cases of operations upon the prostate, especially for the relief of the so-called hypertrophy of the organ.

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A Study of Diabetic Urine.—The undersigned, who is desirous of making an original research of the constituents of the urine in diabetes mellitus, *especially of acetone* and its supposed relations to the *coma diabeticum*, would be under obligation to any physician who would let him have the urine of such patients.—G. METZLER, University of Pennsylvania, 36th and Woodland Avenue, Philadelphia.

The Philadelphia Polyclinic Hospital.—The Board of Trustees of the Polyclinic Hospital at their regular meeting on April 21st created an additional Chair of Gynæcology, and elected W. H. Parish professor to that chair. W. H. Sudduth, M.D., D.D.S., was elected Professor of Pathology and Dentistry.

The Building Committee reported that contracts had been awarded for $37,430, and that work on the portion of new building, Eighteenth and Lombard Streets, would be completed prior to June 1st; and that $11,560 would be needed to finish the interior ready for occupancy in September. To meet this amount Mr. Theodore Kitchen, Mr. C. C. Roberts, John B. Roberts, M.D., and the Ladies' Aid Society started a subscription paper for $250 each. A similar paper has been started for running expenses, and already fifteen names were down for $150 each as an annual contribution.

To avoid the delay in waiting for money to be contributed, Mr. Charles B. Baeder offered to loan, without security, the amount necessary to push the new building on to completion without delay.

The Treasurer's report showed:

Cash on hand	$4424	
Invested funds	5680	
R. J. L. testimonial free bed fund	3580	
Due from State, last instalment	2500	
		$15,184
Liabilities for new building		15,000
Maintenance		2000

The recent investigations of charitable institutions had stimulated the trustees to institute a most searching investigation into the minute details of the Polyclinic Hospital. The House Committee reported that it had weekly inspected every part of the present temporary building, and could not too highly commend the efficient services of the matron and the apothecary.

The Ladies' Aid Society had been most efficient during the past three months by untiring devotion to their work. A large amount of money is now in their treasury for the children's play-room, the children's ward, and the bed for cripples.

A very successful tea was given at the Hotel Stratford on the evening of April 21st for the benefit of the building fund.

Vital Statistics of New York City in 1889.—The annual report of the Health Department shows that there were 39,583 deaths in New York City in 1889. The population being taken at 1,571,000, the death-rate was 25.1 per 1000. There were only 37,527 births recorded; marriages 14,400. Of smallpox there were two cases, with one death. There were 1414 cases of typhoid fever reported, and 351 deaths; 8849 cases of scarlet fever, and 1163 deaths; 6489 cases of diphtheria, and 1734 deaths; 6443 cases of measles, and 452 deaths; 128 cases of cerebro-spinal meningitis, and 110 deaths. The number of vaccinations was 74,500. The summer corps of physicians visited 34,500 houses, and prescribed for 16,150 sick persons.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 22 TO APRIL 28, 1890.

By direction of the Secretary of War, ROBERT H. WHITE, *Major and Surgeon*, now on duty at Fort Myer, Virginia, will report in person to the Superintendent of the U. S. Military Academy, West Point, New York, for temporary duty as Post Surgeon during the absence of Henry McElderry, Major and Surgeon, as a member of the Army Medical Board, New York City. Upon the return of Major McElderry to duty at West Point, Major White will return to his proper station.—Par. 4, *S. O. 94, Headquarters of the Army, A. G. O.*, April 22, 1890.

By direction of the Secretary of War, the following changes of stations of officers of the Medical Department are ordered:

KILBOURNE, HENRY S., *Captain and Assistant Surgeon.*—From Vancouver Barracks, Washington, to Willet's Point, New York.

GRAY, WILLIAM W., *Captain and Assistant Surgeon.*—From Fort Maginnis, Montana, to Fort Sherman, Idaho.

BANISTER, JOHN M., *Captain and Assistant Surgeon.*—From Fort Sherman, Idaho, to Fort Stanton, New Mexico.—Par. 1, *S. O. 93, A. G. O.*, April 21, 1890.

RAYMOND, HENRY I., *Captain and Assistant Surgeon* (Newport Barracks, Kentucky).—Is hereby granted leave of absence for twenty-five days, to commence on or about May 2, 1890.—Par. 5, *S. O. 91, Division of the Atlantic*, April 19, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING APRIL 26, 1890.

SCOFIELD, W. K.—Commissioned a Medical Director from February 8, 1890.

MCMURTRIE, DANIEL.—Commissioned a Medical Inspector from February 8, 1890.

BOGERT, E. S.—Commissioned an Assistant Surgeon from April 16, 1890.

SPRATLING, D. W.—Commissioned an Assistant Surgeon from April 16, 1890.

MARTIN, H. M., *Surgeon.*—Reported his return home, and granted sick-leave.

WOOLVERTON, T., *Medical Inspector.*—Detached from the Navy Yard, Washington, D. C., and wait orders.

BEYER, H. G., *Passed Assistant Surgeon.*—Ordered to delay reporting on board the "Yantic" until further instructed.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FROM APRIL 7 TO APRIL 19, 1890.

FESSENDEN, C. S. D., *Surgeon.*—To proceed to Marion, Ky., on special duty, April 16, 1890.

BAILHACHE, P. H., *Surgeon.*—Detailed as Chairman of the Board for Physical Examination of Officers of Revenue Marine Service, April 12, 1890. To proceed to Portland, Oregon, Tacoma, Seattle, and Port Townsend, Wash., as Inspector, April 16, 1890.

HUTTON, W. H. H., *Surgeon.*—Detailed as Chairman of the Board for Physical Examination of Officers of Revenue Marine Service, April 10, 1890.

LONG, W. H., *Surgeon.*—To proceed to Marion, Ky., on special duty, relieving Surgeon Fessenden, April 18, 1890.

KALLOCH, P. C., *Passed Assistant Surgeon.*—Detailed as Recorder of the Board for Physical Examination of Officers of Revenue Marine Service, April 12, 1890.

MAGRUDER, G. M., *Assistant Surgeon.*—Detailed as Recorder of the Board for Physical Examination of Officers of Revenue Marine Service, April 10, 1890.

GUTIERAS, G. M., *Assistant Surgeon.*—To report to the Superintendent of Immigration, New York, for special duty, April 12, 1890.

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THE MEDICAL NEWS.

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ORIGINAL LECTURES.

AMPUTATION OF A "TAPIROID" CERVIX. ENUCLEATION OF A UTERINE FIBROID.

A Clinical Lecture
delivered at the Hospital of the University of Pennsylvania.

BY WILLIAM GOODELL, M.D.,
PROFESSOR OF GYNECOLOGY.

GENTLEMEN: I have not seen this patient before, but I have learned the facts of her history from Dr. Taylor, who tells me that she has had five labors—all instrumental, and at all of which the child was born dead. The trouble about which she consults me to-day is an enlargement of the cervix, which protrudes from her body whenever she stands on her feet, and which she takes to be the prolapsed womb. She is, however, wrong in this surmise. The real cause of her trouble is, that in some one of her labors she has received a stellate laceration of the cervix, two of the three tears passing one on each side of the anterior lip, and the third tear passing through the posterior lip, so that the os is divided into three parts. From the congestion set up by this constant irritation there has resulted an unusual hypertrophy of each one of these parts, which is most marked in the anterior. This is five inches long, and it so strikingly resembles the male organ in a state of erection, that a woman with this misfortune might seem to the ignorant to be an hermaphrodite. The elongations of these divisions of the cervix bear a resemblance to the tapir's snout, whence the origin of the expression tapiroid cervix.

What I purpose to do to-day is to amputate this enormous cervix at a point above the cicatricial tissue of the tears. The chief dangers in this operation are penetration of the bladder anteriorly, which would cause a vesico-vaginal fistula, and cutting into Douglas's *cul-de-sac* behind and thus possibly causing peritonitis. In order to guard against the former accident, I pass the sound into the bladder and thoroughly define the vesical limits. Having thus settled where the bladder ends, I penetrate the cervix just below it with a needle armed with a stout thread. By this thread I have the cervix and womb completely under my control.

I now begin my amputation, and soon find to my chagrin that I have penetrated Douglas's *cul-de-sac*. I say to my chagrin, not because it is a serious mishap in these days of antisepsis, but because no surgeon likes to find that his knife has gone where he did not intend it to go. It is not the fear of the result to the patient that makes me chagrined, but the pardonable vanity of a surgeon. Closing this opening with two fine sutures, I resume the operation and in a few moments have the cervix removed. I shall carefully preserve it, as it is the best example I have ever seen of a tapiroid cervix. As there will be a subsequent tendency to stenosis, I dilate the cervical canal, and, while I am operating on the next patient, Dr. Taylor will complete the operation by coaptating the mucous edge of the circumference of the cervical wound to the mucous edge of the external os by sutures radiating from the latter. In other words, he will, by sutures resembling the spokes of a wheel, approximate the tire of this raw cervical wheel to the edge of its hub. These sutures will not be touched for at least two weeks. During that time the object of lessening uterine congestion and cervical elongation will be attained, not only by actual shortening from the operation, but also by retrograde metamorphosis caused both by the repair of an open sore and by the seton-like action of each suture.

ENUCLEATION OF A UTERINE FIBROID.

I began this operation ten days ago before a ward-class, and I shall try to finish it to-day in your presence. In fact, it might be said that I began it two weeks ago, as I shall explain in the course of my lecture. The woman is thirty-two years old, married for fourteen years, but sterile from a large uterine fibroid of the variety known as soft myoma, reaching up above the umbilicus. She is slowly being killed by the hæmorrhages and by her sufferings. What is to be done with it? The tumor is growing rapidly, and, if left to nature, it will carry off this woman within a year. How shall it be removed? Its position is neither on the outside of the uterus (subperitoneal), nor within the uterine cavity (submucous), but within the very uterine wall itself (interstitial). It is situated in the right wall of the womb; it has grown to a size larger than that of the adult head, and it has pushed the uterine cavity before it to the left. The sound penetrated five inches, showing that the uterine cavity had been enlarged, but not in proportion to the size of the tumor. When I first examined it, the cervix had become obliterated by pressure, and the lower uterine zone was bulging into the vagina. The *os uteri* readily admitted the finger. There was milk in the breasts, and the tumor, which is soft and gives a false sense of fluctuation, was very naturally mistaken for pregnancy by more than one physician.

I debated in my mind what was best to be done. If I made an abdominal section I should find it difficult to get a pedicle for the cervix is effaced. On the other hand, the tumor was evidently trying to escape *per vaginam*. So I decided to aid its efforts in that direction. Accordingly, with scissors, I incised the cervix in various directions to enlarge it, and then cut open the capsule of the presenting portion of the tumor with Adams's subcutaneous saw. I used the saw, both because the wound made by it is jagged, and does not bleed so much as a clean cut; and because the linear motion of the saw takes up far less room than the open blades of the scissors. With my finger I then stripped off the capsule from the tumor as far as I could reach.

Ergot was given in decided doses with the hope that the uterine contractions would force the tumor out. But,

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while the tumor did protrude in a measure and slowly enlarged both the *os uteri* and the opening into the capsule, it was not a success, for necrosis of the fibroid took place, the discharges became excessively fetid, and septic symptoms set in. So I brought her before a ward-class and removed piecemeal, and with much difficulty, about half of the tumor. The fragments were not weighed, but I should say they must have amounted to five pounds. The best instruments for this purpose are the obsolete guarded obstetric crotchet forceps and a very large and heavy pair of fenestrated polypus forceps. I have performed this operation many times. In one it took five sittings before a very large tumor was removed, and the stench from the portion left behind at each sitting was very great, yet by dint of intra-uterine injections of corrosive sublimate the patient recovered. By the use of the same antiseptic measures our patient of to-day has progressed very well, and is in good condition for the operation of enucleation, by which I hope to remove the remaining half. The lower portion of the tumor has become rotten from being denuded and from the injuries it sustained at the last operation.

I twist off fragment after fragment with the fenestrated forceps. The rotten portion has now been wholly removed, and I introduce the guarded obstetric forceps. With this I tear up the living portion and again remove some fragments with the polypus forceps. Occasionally the parts are irrigated with a 1 : 2000 solution of corrosive sublimate.

I was in hopes to get all the tumor away at this sitting, but the woman's pulse is becoming too frequent and feeble. These signs, whenever a patient is under ether, mean danger—danger here from shock, not from loss of blood, which has not amounted to much. So I shall have to leave the rest of this tumor for another sitting. I therefore syringe out with vinegar the large cavity in the wall of the womb and also the uterine cavity. This will stop all bleeding. I next most thoroughly wash out the same cavities with the sublimate solution, taking care that none of it remains behind to poison the patient.

To save our patient from blood-poisoning, to which she is liable from the fetid discharges which will assuredly come from the rotting tumor, I shall have the cavity syringed out twice or even three times a day with a 1 : 4000 solution, telling the nurse to press the perineum backward after each cleansing, so that none of the solution may lodge in the curve of the vagina. I would rather have our patient run the risk of mercurialization than the risk of septic infection. When she has fully recovered from the shock of to-day's operation I shall remove the remainder of the tumor.

NOTE.—At the next clinic Dr. Goodell informed the class that this patient rallied well from the operation, and was seen in an apparently excellent condition by the resident physician in his last round at ten o'clock of the night of the operation. Twenty minutes later he was summoned to find her dead. It was evidently a case of heart-clot formed during the repeated operations, and Dr. Goodell expressed the regret that he had not removed the tumor by abdominal section. He said that in that case he would have formed his pedicle from the uterine shell left after the enucleation of the tumor.

ORIGINAL ARTICLES.

THE LABYRINTH OF THE EAR.[1]

BY B. ALEX. RANDALL, A.M., M.D.,
PROFESSOR OF DISEASES OF THE EAR IN THE PHILADELPHIA POLYCLINIC; OPHTHALMIC AND AURAL SURGEON TO THE EPISCOPAL AND CHILDREN'S HOSPITALS.

ONLY some forty years ago, as the treatment of diseases of the ear began to receive some attention from medical men, one of the greatest German authorities used to ascribe a very large proportion of his cases of impaired hearing—more than one-half—to "nervous deafness." Further study has shown that such a diagnosis was akin to that of "amaurosis" in eye disease, and comprehended numerous forms of unknown trouble, later recognized as distinct and unrelated; and the tendency to exclude such terms, as being mere cloaks of ignorance, went too far in explaining away such views. To-day more scientific methods enable us to determine with far greater accuracy whether a lesion of the nervous portion of the apparatus exists or not; and there is promise of notable development, not only in the diagnosis, but also in the therapeusis, of affections of the internal ear. In asking attention, therefore, to the anatomy of the labyrinth, it is not merely that we may study an exquisitely complex apparatus and marvel over its beauties, but that we may endeavor to grasp what is known of its structure and of its functions, and utilize this knowledge to the present benefit of humanity and the further advance of otology.

The internal ear of man is a marvellously delicate and complicated apparatus, walled in by bone of stony hardness, and offering considerable difficulties to the investigations of the anatomist; but thanks to the many modern methods of investigating it, the task is becoming easier. Its normal anatomy, embryology, and physiology are fairly well understood, and its pathology is advancing with every year. The student can find good descriptions of it in the text-books, and can readily memorize them for examination requirements; but since the actual dissection of the organ of hearing is rather infrequent, even among aurists, a working knowledge of its anatomy is by no means commonly retained, and the need of reiteration of the most elementary details is very evident to one who endeavors to teach otology. This is my excuse for going over ground already well trodden.

The internal ear, or labyrinth, consists of three principal parts—the vestibule, the semicircular canals, and the cochlea—and is the seat of the termination of the fibres of the acoustic nerve. Some points in its physiology are not yet determined, but

[1] The substance of a lantern-lecture delivered at the Philadelphia Polyclinic, April 15, 1890.

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the anatomy has been elaborately studied in almost every detail, and its exquisitely complex arrangement clearly revealed. Here the waves of the atmosphere which we call sound are received after passing through the external and middle ear, and here these impulses are transmuted into nervous force and passed on to the centres of hearing in the brain. If we consider that the ear has to take cognizance of vibrations of very varying length, comprising not less than eleven octaves—twelve times as wide a range as the spectrum-scale of the eye—it will be evident that the mechanical arrangement must be very complete; and the marvel is that it should have been so thoroughly discovered and studied.

The generally accepted view which designates the labyrinth as the *receiving* apparatus, in contrast to the *conducting* apparatus external to it, has abundant practical and theoretical foundation. Anatomical points mark a total change as we pass from the tympanum to the inner ear. Air-cavities, most curiously contrived, make up the external and middle ear; but in the labyrinth all the cavities are filled with fluid. Further, there is a most singular doubling of the labyrinthine structures—a membranous labyrinth floats within a bony capsule, which repeats in most respects, but in larger dimensions, the configuration of its several parts. As the bony labyrinth has long been known, and its rigid shape seemed to give and maintain the form of the membranous labyrinth, the latter has generally been described as moulded within the osseous walls; in fact, however, the membranous structure is developed first, and is far advanced in its growth before its capsule begins to take shape or undergo ossification. In point of time, therefore, the beautiful bony capsule is secondary; and investigation shows that its importance is also secondary to that of the delicate structure within. To this, then, let us first give attention.

The membranous labyrinth originates as a pouch from the ectodermal surface, and, separating early, it forms an independent spherical sac, the otic vesicle. This vesicle differentiates by the outgrowth of tubular processes, the first of which, growing inward and backward, forms the endolymphatic duct, while three processes bud out from the posterior portion to curve through the surrounding tissues and return again, constituting the semi-circular canals. From the lower anterior portion a single tubule grows forward to wind spirally inward and form the cochleal canal. Nerve-fibres from the posterior cerebral vesicle early unite the otic vesicle and the group of ganglion cells pertaining to the cochlea to the central nervous system; and the mesoblastic tissues differentiate about the developing otic vesicle to form the supporting structures of the labyrinth. An inner layer contributes a close-fitting sheath to the epithelial tissues, while an outer layer, separated by the developing perilymphatic spaces, forms the outer capsule, which becomes, later, the bony labyrinth. The endolymphatic structure of epiblastic tissue sheathed by a delicate mesoblastic layer forms, then, the membranous labyrinth. As fully developed this consists of the cochleal canal anteriorly, the semicircular canals posteriorly, and the vestibular sacs, the saccule and utricle, between them; the cochleal canal communicating by a narrow *canalis reuniens* with the saccule, the semicircular canals opening into the utricle, and these two distinct sacs communicating with the membranous vestibular

FIG. 1.

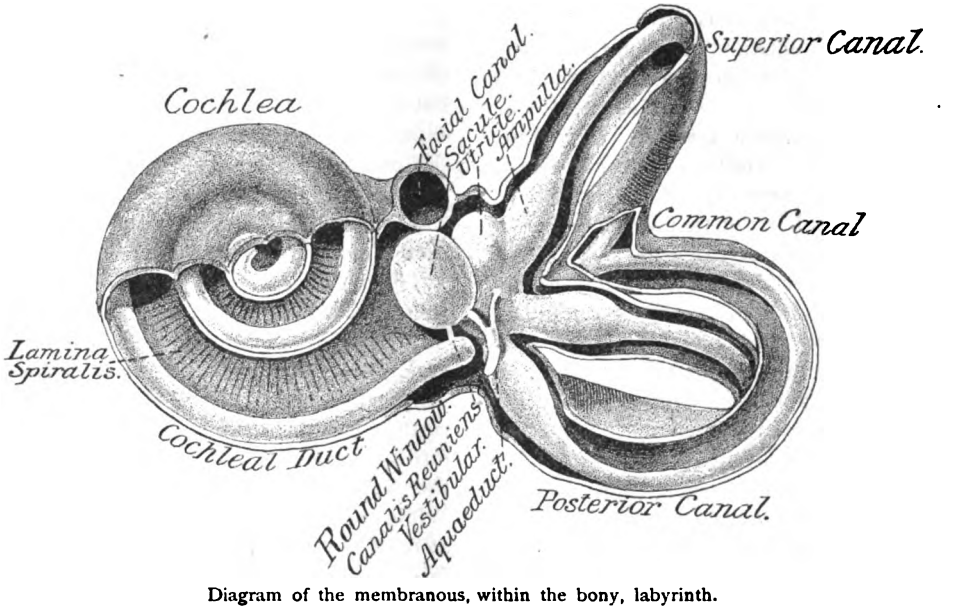

Diagram of the membranous, within the bony, labyrinth.

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aqueduct, which thus furnishes an indirect union. The relations of these several parts are clearly shown in the diagram.

The cochleal canal consists of a tube, triangular in section, which winds spirally inward and upward for about two and three-fourths turns from its blind cæcal extremity in the vestibule to its blind end in the apex of the cochlea. Throughout its length it is abundantly supplied with fibres of the acoustic nerve, and its minuter structure shows most elaborate differentiation. Even in the infant, the accessory apparatus of the cochleal capsule and axis obscures its primary simplicity; and as these have bearing upon its function, further study of it may be deferred until these parts have been considered.

The semicircular canals at the posterior extremity of the membranous labyrinth show at almost all stages their peculiar character. They are three C-shaped tubes arising from the utricle and occupying planes almost exactly at right angles to each other—one horizontal, one transversely vertical (frontal), and one longitudinally vertical (sagittal). While the vertical canal may be most conveniently designated in accordance with the cranial sutures with which they nearly correspond in direction, it should be noted that the axes of the pyramids of the temporal bones converge strongly forward, and that it is really in relation to these axes that the canals are transverse and longitudinal. Each canal consists of a cylindrical tube 0.5 mm. in diameter, which broadens at one end into a pear-shaped ampulla 1.5 mm. wide before joining the utricle, while the other end joins it with little widening. The ampullæ of the frontal and horizontal canals are close together above, while that of the sagittal or posterior canal is below. The simple end of the horizontal canal is but little to the median side of its ampulla, while the undilated extremities of the two vertical canals unite into a common trunk before joining the upper median portion of the utricle. Each canal consists of a delicate hyaloid tube lined with flattened epithelium, and, except in the ampulla, is destitute of acoustic nerve-supply or of differentiation suggestive of important function. Each ampulla, however, receives a special nerve-trunk which supplies a differentiated area of terminal apparatus, a *crista acoustica* of cylinder epithelium carrying stiff hairs which extend out to the middle of its lumen. This acoustic crest extends across the side of the ampulla continuous with the convex wall of the canal; where a deep furrow, into which the nerve enters, indents the pyriform sac. Above the hair-like cilia of each crest floats a delicate gelatinous membrane.

The *utricle*, or larger vestibular sac, with which the semicircular canals connect, is of irregular, rather crescentic form, its greatest length of 5.5 mm. being up and forward from the mouth of the ampulla of the posterior canal. It receives the five extremities of the semicircular canals principally on its posterior wall, while from its anterior surface a narrow tube joins the endolymphatic duct. Its convex anterior wall is in contact with the adjacent saccule and the connective tissue here binds them closely together, but without communication of lumen or fusion of their walls. The smaller sac, or *saccule*, is of a slightly flattened elliptical shape, and communicates by two narrow tubules with the other portions of the endolymphatic cavity—the one below being the *canalis reuniens*, which connects it with the lower end of the cochleal duct; the other, one of the Y-like arms of the endolymphatic duct. Each of the vestibular sacs consists of a delicate fibrous membrane lined with epithelium and receives a branch of the acoustic nerve, which terminates in a differentiated area of its wall, the *macula acoustica*. In structure these are similar to those in the ampullæ, but are less prominent, with smaller hairs projecting from the nervous epithelium, and with the gelatinous layer overlying them enclosing numerous crystals of lime—the otoliths. The last constituent of the membranous labyrinth is the endolymphatic duct, or membranous vestibular aqueduct, which is really one of the first portions to differentiate from the otic vesicle, and is well developed when the other divisions are only appearing. It becomes narrowed off from the vestibular sacs until the connection is but a narrow, forked tube, while its blind extremity expands into a flattened sac between the layers of the dura in the cranial cavity. Such, then, is the membranous labyrinth: the result of the growth and differentiation of the otic vesicle, reinforced by a layer of mesoblastic tissue.

The mesoblastic tissues surrounding the otic vesicle form three layers, of which the inmost ensheathes that structure as stated. The outer layer undergoes chondrification as a preliminary to the ossification which converts it into the bony labyrinth, while the intermediate tissue is hollowed out into spaces which intervene at most points between the two structures and are filled with the perilymph. While this fluid separates the membranous labyrinth at most points from its capsule, and it may, therefore, be said to float within its protecting structures, it is, in fact, firmly anchored throughout its extent. The convexities of the tubular portions and one side of each of the sacs adhere to the capsule and the structure occupies an eccentric position.

The bony labyrinth, or capsule, is a structure formed about the fully developed membranous labyrinth and conforming to its size and shape, except in so far as it is held away from it by the intervening lymph-spaces. It consists of the osseous cochlea, vestibule, and semicircular canals and the narrow aqueduct of the vestibule, and as the cribriform bot-

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tom of the internal auditory meatus forms a part of its median wall, this meatus is often reckoned with it as part of the internal ear. The bony semicircular canals correspond closely with the membranous tubes which they surround, but are three times as wide (1.5 : 0.5 mm.), the lymph-space being in the concavity of the turn, while the membranous tube is attached to the convexity. They present distinct ampullar enlargements, yet these are but little larger than the contained sacs (2 : 1.5 mm.). The bony vestibule is much simpler in form than its contents, and presents but a single cavity with depressions upon its median wall corresponding to the points of attachment of the sacs. One of these is quite distinctly marked, and by its hemispherical shape indicates that it lodges the rounded saccule; another furnishes a bed for the irregular utricle, while a third receives the cæcal commencement of the cochleal duct. The bony cochlea closely resembles the snail-shell, from which it takes its name, and consists of a tube arising from the lower anterior part of the vestibule to pass forward and wind its narrowing coil two and a half times around a conical axis. The membranous tube, as in the semicircular canals, clings to the convexity of its turns, and the remainder of its lumen is divided by a shelf of bone projecting from the axis—the spiral lamina—into two distinct perilymphatic spaces. The upper of these is a direct continuation of the cavity of the vestibule and is called the vestibular scala; the lower is shut off from the vestibule by the attachments of the cochleal duct, but communicates with the tympanum by means of the round window and is hence called the tympanic scala. This opening of the round window is occupied by the secondary tympanic membrane, so the tympanic scala is closed at its lower extremity; and while free communication is generally supposed to exist at the apex of the cochlea, there is reason to doubt if this is true. The round window, with its membrane, is simply an unossified portion of the bony labyrinth. The membrane is so tightly stretched inward that it can yield little to pressure from the tympanum, while it can yield to the pressure from within; and it may probably be regarded as a mere safety-valve for the cochleal tension. There is another window into the labyrinth, however, which is far more important—the oval window of the vestibule, which is occupied by the foot-plate of the stapes. The slight, piston-like movements which this last of the chain of ossicles makes in response to vibrations communicated to the tympanic membrane find their parallel in all well-differentiated ears, and interference with them at once lowers or abolishes the perception of aërial vibration, as sounds can then be heard only by bone-conduction. Everything in the normal and pathological study points to the great mechanical importance of this window; and we are learning that if this be filled with an elastic structure hearing may still be useful, even if all the ossicles are lost and the conducting apparatus is a mere wreck. The margins of this window are covered with cartilage and articulate with the similarly covered edge of the stapes-base, while the entire inner surface is covered with the delicate periosteum. Quite a space—the *cisterna perilymphatica*—intervenes between the stapes and the membranous labyrinth, so that the vibrations imparted to the perilymph are transmitted about as freely to all portions of the auditory apparatus as to the saccule which lies just opposite. It is noteworthy, as Rüdinger points out, that the acoustic area of the saccule is on the far side of that sac and with its hairs directed toward the stapes-base, while that of the utricle is upon its nearer anterior wall and with its hair-cells directed away from the stapes.

Here, then, is the usual entrance-point of the vibrations given off by sounding bodies, and from this point we must try to follow them if we wish to grasp their method of transmission. The impulses given by the stapes-base probably affect, first of all, the saccule and utricle close at hand, setting the perilymph in undulation and causing movements of the gelatinous mass which floats just above the hair-cells of the acoustic area of each of these two sacs. The stimulation of these nerve-cells, conveyed as nerve-force to the cranial centres, gives rise to quantitative impressions of noise. But no mechanical arrangement is here seen suggesting a perception of the quality or pitch of the sound or sounds—only differences of loudness or faintness distinguish one from another. So, too, the examination of the other areas having acoustic nerve-supply—the acoustic crests in the ampullæ—shows no such differentiated structure. These nerve-cells may have a quantitative hearing function or they may serve merely as indicators of the motion of the perilymph in the semicircular canals occasioned by the movements or the position of the head. In the latter case, like the visible bubble of a spirit-level, they afford the constant suggestions of the position of the head so essential to equilibrium.

It is in the cochlea, therefore, that we must look for the apparatus of qualitative hearing, and the marvellous complexity of the structure here found accords well with such a function. We have spoken of the cochleal canal as a triangularly compressed tube rising in spiral turns around the axial cone of the cochlea and having a perilymphatic space on each side which accompanies it in its windings. A section longitudinally through the conical bony axis shows this and more. We see that the modiolus or osseous cone is hollow, and its multitude of small channels are practically continuous with the internal auditory meatus and transmit, piecemeal, the bun-

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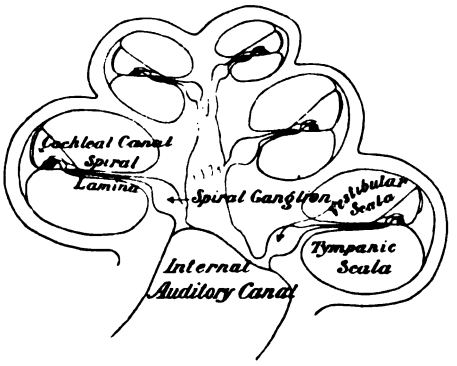
dles of nerve-filaments into which the cochleal branch of the acoustic nerve separates at the cribriform plate. These bundles turn at right angles to the axis of the cochlea to pass out between the two plates of bone constituting the osseous spiral lamina. On their way they pass through a ganglion mass of cells which appears round on section, but in reality is cylindrical and winds spirally upward parallel to the cochleal duct. The bony spiral lamina which projects out to meet the nearest angle of the cochleal canal has a continuation to the opposite wall of the capsule afforded by the basal or tympanic side of this canal—hence, often called the membranous

FIG. 2.



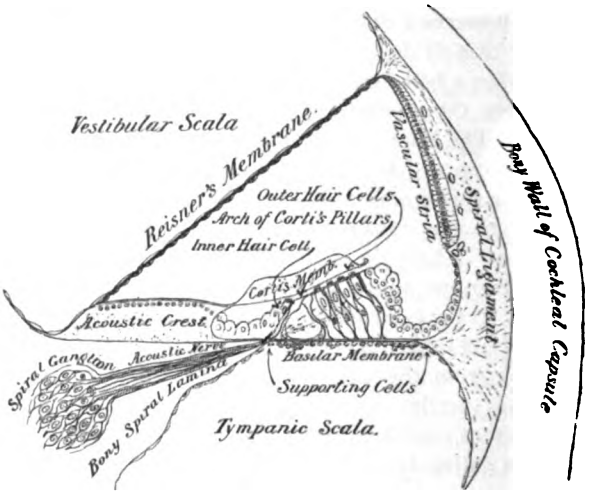
Section of cochlea, from apex to base.

spiral lamina—which expands into a crescentic cushion of fibrous tissue to form its insertion upon the outer wall. This spiral ligament consists of fibrous bands, practically continuous with the strong fibrous tissue of the membranous spiral lamina or basilar membrane, radiating from its outer extremity (to which the name spiral ligament is sometimes restricted) and blending with the periosteum of the capsular wall. The curious point is clearly shown in such a section that while the bony spiral lamina becomes shorter, and almost every other element of the apparatus decreases in size toward the apex of the cochlea, the membranous spiral lamina, or basilar membrane, grows longer. Beginning with a length[1] of less than 0.05 mm., it increases rapidly to some 0.2 mm. in the middle of the first cochleal turn, is full 0.3 mm. in the second turn, and about 0.4 mm. near the apex (0.495 mm., Hensen). As minuter study shows this membrane to be formed of a series of parallel fibrous cords, we reach the important fact that the cochlea possesses a system of cords of greatly varying length stretched tightly across from the firm bony shelf toward the opposite wall and comparable to the strings of a harp or piano, except that their number is estimated at from 13,000 to 24,000.

[1] This dimension is more strictly the breadth, if we consider the basilar membrane in its entirety and not in section, as here seen. Its length, from apex to vestibule, is nearly 35 mm.

The natural assumption of the great importance of such an arrangement is strengthened by further study of the minute anatomy of the organ, for a highly differentiated structure, forming the nervous end-apparatus, rests upon this basilar membrane. The organ of Corti, as this is called, consists of arches formed of stiff pillars, which support series of columnar cells provided with hairs and receiving the terminal nerve-fibrils — the "hearing-cells." There is a single row of these to the inner and three to five rows to the outer side of the tunnel formed by the unbroken series of arches, and all are but-

FIG. 3.



Section of cochleal canal, showing Corti's organ.

tressed by complicated sets of what are generally called supporting cells. The pillars arise from broad bases upon the basilar membrane and converge to form the arches, their enlarged heads being compressed to form close, regular articulations, while expansions from these reach outward as a network through the meshes of which the hair-cells protrude. Much that is curious and beautiful in the structure of Corti's organ must be passed over in silence, while we consider only its more essential parts. The hearing-cells are crowned, as has been said, by tufts of hairs or stiff cilia, shorter and much more numerous than those of the somewhat similar hair-cells of the vestibular sacs, and to these cells have been traced the ultimate nerve-fibrils which leave their medullary sheaths in the bony lamina spiralis and emerge through small openings at the bases of the inner pillars. Evidently, then, these hair-cells are the nervous end-apparatus. Above Corti's organ lies a thick gelatinous membrane, comparable to those which float above the hair-cells in the vestibular sacs, except that it lacks otoliths; and while its function is uncertain, it is doubtless important, if we may judge from its development before the differentiation of the adjacent parts. It extends out-

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ward from a fibrous crest which rises from the bony shelf; but its other end, which is generally free, has been described as fastened either to the outer part of Corti's organ or to the projection on the external wall opposite to it (Deiters). It is not known, then, whether it floats free or is fast at both ends and stretched across above the hair-cells, nor whether it normally rests in contact with these or is slightly separated from them. Whether it acts as a damper to check vibration or as a point of impact for the excitation of the hair-cells is not clear, but the latter seems more probable.

The cochleal canal consists, then, of a triangular tube whose epithelial layer has been variously modified from its primitive simplicity; while its mesoblastic sheath retains its undifferentiated character only in its upper wall or Reissner's membrane; the acoustic crest, the basilar membrane, and the crescentic spiral ligament representing the remainder of its extent.

Some idea of the function of the cochlea must be apparent from these details of structure. In the series of tightly stretched cords of the basilar membrane we have the mechanically receptive elements, each attuned to a certain wave-length and responding whenever such vibrations are transmitted by the labyrinthine fluids. The longest of these cords are in the apex of the cochlea and these are tuned for the lowest tones for which the ear is adapted—about fifteen vibrations to the second. The shortest cords are at the beginning of the first turn and some of them are probably attuned to higher tones, with shorter wave-lengths, than the conducting mechanism of the ear will generally convey. Blake has shown that tones of 80,000 or more vibrations, generally inaudible, can be heard when a perforation in the tympanic membrane admits the vibrating air direct to the windows of the labyrinth. The limits of the audible scale vary in different ears and so do the maxima and minima lengths of the basilar fibres, according to the most accurate measurements. Pathology confirms this relation of the different parts of the cochlea to these different tones; and deafness for low notes has been shown to be associated with lesions in the apex, while deafness for high tones has marked the cases with lesions about the base.

Complex as is the construction of Corti's organ, the function of its parts is largely secondary, for in birds they are lacking. The arches formed by the pillars probably serve as weights to tune the underlying cords to the proper pitch or as bridge-points between which the cord is free to vibrate. As confirming the latter view, it is noteworthy that the pillars increase in length regularly from base to apex (the inner 48–70 μ, the outer 62–103 μ) and the span of the arch grows from 48 to 90 μ. In the basilar membrane, therefore, there are present cords fitted to vibrate to any tone which is transmitted to them, and to communicate this movement to the terminal nerve-cells which rest upon them. These nerve-cells are somewhat less numerous, the inner hair-cells being about one to seven of the cords, and the outer hair-cells, in their three or four rows, only about four times as numerous as the inner, yet their placing is such that doubtless every pair of cords is in special relation to a hair-cell. Of the least numerous inner hair-cells there are about 300 for every octave of the musical scale, or 40 for each tone; and experiment has shown that intervals of $\frac{1}{64}$ of a tone are the minutest distinguishable by the human ear. Just as in the retina the limits of visual acuity are dependent upon the size of the cones and their closeness together, so in the ear the acuteness of acoustic perception depends upon the similar relations of the hearing-cells. Some details of structure and function have not yet been fully decided for either organ, but enough is known to show a most interesting parallelism and to furnish us with many resting-points for working hypotheses. Physiological and pathological students are busy with these matters, testing, correcting, and expanding these hypotheses; and every year is adding to the power of the aurist to differentiate the various diseases heretofore confounded in clinical work and thus to locate and combat them.

GYNECOLOGICAL ELECTRO-THERAPEUTICS.

BY HORATIO R. BIGELOW, M.D.

MY reason for continuing the discussion of a subject already nearly threadbare from excess of wear and tear, and sadly handicapped by the amount of the personal equation, is to be found in the very readable article of Dr. Baldy which appeared in this journal of March 22d. Dr. Baldy writes as a thoroughly equipped surgeon, speaking from ripe experience, and drawing his inferences from a careful weighing of his own excellent record, as well as from a patient examination of the work of others. His paper may be received as the type of polemic argument of most other surgeons who occupy themselves with abdominal surgery. In his chosen field he is so far ahead of me, his personal experience so much greater, and his knowledge of it so much more absolute that I have no right to gainsay him when he speaks as an operative surgeon. Moreover, the article he has published is well written, logical, and not without much truth. If it hits us who believe in electricity rather hard, the punishment is healthful and was deserved. I should like once more to place on record my own views in regard to gynecological electro-therapeutics, detailing its merits, its dangers, and its shortcomings. To do this at all fairly the word of any professional brother who has carved out

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for himself recognized standing must be accepted without the shadow of a doubt, whether he be electrician or surgeon; and no man may consider himself a more accomplished diagnostician than his equally intelligent neighbor, since it would be a matter of much difficulty to find two men who would agree upon any given point. Experience, training, and study give us all a right to deferential hearing, and anyone who has encompassed these prerequisites may demand a respectful consideration of his theories. The diagnosis of A. may be diametrically opposed to that of B., but if both of them are well trained in their profession the opinion of the one is quite as valuable as that of the other. If A. be a surgeon skilled in the field of the abdomen and B. a good, thorough-going gynecologist, A. can have no possible right to conceive that the knowledge he gains by looking into the cut he has made, and which he applies in formulating a diagnosis before beginning the operation, is any more accurate than the conclusion which B. reaches with an educated sense of touch and a knowledge of pathological processes. I have seen and felt hundreds of diseased tubes from *above*, but I do not believe that it is at all necessary in arriving at a diagnosis; and as compared with the sense of touch which grows out of the examination of hundreds of women, and with a knowledge of pathological processes learned in the dead-house, it amounts to nothing. A ripe observation of the work of some of the best abdominal surgeons in the world, a constant association with Continental men for several years, has convinced me that the surgeon often arrives at a *just* diagnosis only after he has opened the woman's abdomen. So, upon questions of diagnosis, I would feel more inclined to agree with B. than A., though in the argument I should consider them both of equal value.

Clinical Testimony and Actual Experiment.—In a very just criticism of my book which appeared in the *Lancet*, November 2, 1889, the writer says:

"The methods of electricity are fully explained, but at the present date it is not too much to expect some proof of the effects of electricity on living tissues. While discussions of this subject seem to occupy much time in societies, facts are conspicuous by their absence. Before statements as to the effects of electricity on the uterus, fibroids, etc., can be properly discussed we ought to be able to read some accounts of actual experiments on fibroid and other tumors on the external and accessible regions of the body. That so much clinical statement should at this time exist side by side with so little scientific research seems to us to be a reproach to all who claim to erect electro-therapeutics into a great curative system."

It *is* a reproach to us, and my critic strikes the keynote. We can never hope for a rational, systematic, and scientific system of electro-therapeutics unless we go to work with our sleeves tucked up and furnish to the inquiring mind of the surgeon the *how* and the *why* of these things. If we are to do anything in the future with electricity we must go backward and learn the A B C of its alphabet. If a galvanic current will diminish a myoma we must be able to demonstrate *how* it does so, and not content ourselves with mere guesswork. It is not enough to cite clinical evidence of its power, we must add to this a demonstration of the actual processes at work. I feel very keenly our shortcomings in this particular, and I am mortified at my own inability to furnish immediately the proof.

My Own Experience.—Only because some of my critics persist in attributing to me claims which I have *never* urged for electricity—accusing me of viewing it as a panacea, etc., mistakes, I take it, which have arisen from a superficial reading of what I have written, do I deem it necessary to reiterate:

1. That I have *never* seen a myoma anatomically cured.

2. There are some myomas which should never be electrically handled.

3. I have *never* seen a pyo- or hydro-salpinx anatomically cured.

4. There are many of these cases which should never be electrically handled.

5. Dr. Apostoli, my master, has *never* claimed in his writings that he cured these cases anatomically.

6. I have *never* denied the possibility of accident and bad results. It would be exceedingly strange if such did not occur.

What I do claim:

1. Myomas may be *symptomatically* cured, and this permanently.

2. Myomas may be reduced in size.

3. Some conditions of salpingo-ovaritis may be *symptomatically* cured.

4. Cases of exudates may be relieved of all painful symptoms. I am not ready to say that they are anatomically cured.

5. Endometritis and metritis are *always* satisfactorily treated by electricity.

6. Malpositions of the uterus are well treated by electricity.

7. Ovarian pain may be cured by its use.

Such is my own experience. Others advance larger claims, and since these emanate from honorable men I am as justified in receiving them as valuable statistics as I would be in receiving the statistics of any surgeon. One man's statistics are just as valuable as those of another.

Question of Cost.—This is a lame argument—very lame indeed. Any man, with a little expenditure of time and ingenuity, can make a battery for himself for ten or fifteen dollars. The whole armamentarium need not cost him within one hundred dollars as much as do the tools of the full-fledged,

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ambitious abdominal surgeon. The *cost to the patient* generally is much less under electricity, at least I should think so, when I hear of women paying one thousand dollars and the charges of a private hospital to be rid of an ovarian tumor. It seems to me this whole affair is one of the individual and does not admit of discussion.

Bad results have happened, undoubtedly, and are happening daily. Chadwick's cases—too bad that these things should be so bruited about, for the notoriety is unfortunate—are fondly quoted by surgeons daily. But I wonder how many deaths happened in the early days of abdominal surgery, and how many are still happening of which we know nothing. If the argument holds good for electricity, how much more seriously must it apply to abdominal surgery. How are the young surgeons of the day to win their spurs, if not through a mortifying experience of bad results. In the Rue du Jour I have *never* seen a bad result, and I soon shall have been nearly a year in attendance upon Apostoli's clinic. In fact there has not been even an alarming symptom since I have been associated with Dr. Apostoli. This is due, I think,

1st. To accurate diagnosis.

2d. To an intelligent differentiating of the treatment required.

3d. To a *thorough knowledge of the subject.*

4th. To thorough preliminary precautions.

5th. To never attempting to accomplish too much.

Of course, as the subject enlarges and draws to itself new disciples and new patients, want of experience will have its train of mourners, both in electricity and in surgery. It may go without saying that many men are much more competent to practise electricity than others, and I still believe that even a brilliant abdominal surgeon would not have flattering results from electricity, simply because it is not his *mêtier*, and his training has not been such as to make him a master of the subject. The same argument will hold good of the electrician attempting the practice of abdominal surgery. I do not find that many bad results ever occur in the practices of competent persons. The popularity of electricity is its greatest danger. It will be practised by people who know little or nothing about it, who even do not know one current from another; so it is bound to suffer. It is a mistake to suppose that anyone can take it up after reading a text-book. It is a mistake for the surgeon to condemn it because of his own bad results, because, I say it with all politeness, I do not believe that many of them have given it the careful study that it requires. Another danger to us is that of claiming too much. We should recognize that electricity is not a panacea; that the cures are not *always* permanent; that many cases should *never* be treated, and *that no case should be over-treated.* There will always arrive a time in the handling of a myoma, when treatment should be suspended for months, otherwise we will be sure to have inflammatory symptoms. Puncturing should be performed by the best men only, and I am not at all sure that I am fond of it, although I have seen some marvellous results in Apostoli's hands. There will always be a certain contingent of danger, but I do not believe that bad results will ever follow the handiwork of the honest, competent man who knows what cases to treat and which not to treat; who makes haste slowly; who does not expect to work a miracle, and who will claim for his work only that which rightly belongs to it.

Dr. Baldy's objections are:

1st. The treatment must be a local one and must be given by the physician himself.

Answer. An evident argument in its favor.

2d. The apparatus is too expensive for any but a specialist to possess.

Answer. Only a specialist, and he a competent one, should possess it.

3d. The patient must submit to a prolonged vaginal manipulation several times a week, sometimes for months.

Answer. No vaginal manipulation necessary. Speculum is *never* used. Sound and electrodes introduced by sense of touch.

4th. It is necessary to remove a great part of the woman's clothing in order to administer the treatment properly and thoroughly.

Answer. No exposure whatever. It can all be done under cover. But what does this objection amount to when opposed to the exposure that a woman undergoes upon the operating table of the surgeon?

Diagnosis.—If we analyze carefully these disputes over points of diagnosis we will find them usually matters of individual unpleasantness, and not of scientific moment. Much writing has succeeded in complicating intelligent diagnosis to a wonderful degree. These things that follow I hold to be absolutely necessary:

1. Careful study in the dead house.

2. Careful attendance upon clinics, especially watching the condition of affairs from above.

3. Careful study of specimens.

4. A large experience in the examination of women.

These facts fresh in our minds, generally speaking, diagnoses are not difficult. Rare cases occur in which the diagnosis requires much care, and even then may be doubtful. It is scarcely modest to dispute the diagnosis of men as eminent as ourselves, because their hobby is not the one that we ride, because this presupposes an assumption of superior

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knowledge. Neither do I at all concede that because a man has opened the abdomen a hundred or more times that thereby he is better qualified to render an intelligent opinion. The great features of pelvic disease are readily recognizable. Myomas, as a rule, are made out, mapped out, and located without much trouble. Intra-ligamentous growths and encysted exudates are sometimes troublesome. Backward displacements of the uterus, with or without a myomatous complication, and ectopic gestations, may give rise to doubt. But if we have our anatomy fresh in our minds; if we know, so to speak, and that by heart, the "lay of the land," the refinements of modern text-books are simply embarrassing, and a little mental picture of the relations of the parts will help us toward a solution. In a recent article in the *Annals of Gynæcology and Pædiatry*, Dr. Cushing says: "Keith has recently published the histories of over one hundred cases of myoma, or what he diagnoses as such," etc. Now, if Keith, with an exceptional experience, is not competent to make out a myoma, is there a man among us who can claim such distinction? When Keith reports his one hundred cases and the results of his treatment; when he says that they were myomas, I certainly should be as fully justified in accepting this statement as fact as I would be in accepting as fact Dr. Cushing's own opinions. Neither have we the least right to "analyze" Keith's position simply because, as an honest man, and in the face of personal abuse, he has had the courage to give up a line of treatment in which he had unequalled success, and to take hold of another plan, which in his hands has given him better results. Why praise him for the work he did as a surgeon, and then damn him with faint praise for equally good work as an electro-gynecologist? Out of one hundred cases reported by him, one died from the effects of the treatment. Out of one hundred cases treated by the abdominal surgeon how many die? Can any responsible gynecologist for one moment believe that Keith would mistake a "subinvoluted uterus with metrorrhagia" for a myoma? And is anyone so omniscient as to hazard a diagnosis with any assurance of certainty upon merely reading the history of a case? There has been much useless writing about this whole matter of diagnosis. If the electrician happens to have success, up jumps the surgeon, and says that his diagnosis must have been bad, simply because the struggling brother has been able to put a few hardly earned pennies in his pocket; and then he proceeds to surround this myoma, or this salpingitis, with such an aggregation of adhesions, he so buries it in omentum and intestine, he so overlays it with bladder, and so complicates it with peradventures and sophisms, that the whole college would be put to their wit's end to know what really ailed the woman. I would like very much to know how many hundreds of tubes and ovaries have been extirpated by surgeons who previously diagnosed pathological change, but which failed to reveal such changes under the microscope after they had been taken out. I have seen many operators, in many climes, but I have never seen a more careful nor a better diagnostician than Apostoli, and I believe his experience in myomas to be as large, if not larger, than that of any other living man. So, when Apostoli asserts that such and such was the case, I should believe him without question.

Chronic Pelvic Inflammatory Diseases.—Dr. Baldy's article is concerned solely with this form of pelvic disorder. It may be objected to my list of disorders in which I believed electricity to be beneficial, that I had confined it within very narrow limits. But in stating my belief that it would cure endometritis and metritis I cover a wide territory, since the endometrium is the *fons et origo* of a vast number of diseases that are propagated by contiguity of structure to organs more remote. The chief symptoms—the most troublesome ones, the only ones for which a woman consults us who suffers from the conditions referred to—are pain during menstruation, coition, walking, and defecation, and a general sense of malaise. I *know* that electricity will dissipate all these pains, and while I do not believe that it will cure the case thoroughly in its anatomical relations—I am speaking now of the old chronic forms—yet it does cause some degree of absorption. Some cases that were treated nine months ago, receiving only a few *séances*, have not felt obliged to return so far for renewed treatment. Electricity finds here one of its most important and valuable fields, and its success will admit of no question. I have much more faith in its powers here than I have in the absorption of myomas. Now, if it will so thoroughly cure the case symptomatically, that the woman will not be conscious that there is anything anatomically wrong about her, why disturb the afternoon siesta of the surgeon? A disease is known to the patient and to us by its symptoms; hence, for our purpose, if the symptoms be cured, the disease does not exist. The surgeon does not do even as well as this by operating, for he does not always cure the symptoms, and he has mutilated his patient. Anyone of ripe experience can remember many cases in which bad reflex neuroses have followed after an abdominal section. Electricity will do vastly more for a woman with chronic pelvic trouble than the surgeon can with his knife. If Dr. Goelet says that he has dissipated these adhesions, I cannot conceive why we should not accept his statement, although clothed in poetic language. The science must go forward or backward, it cannot stand still, and improvements will be made upon

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Apostoli's plan by his disciples as experience and knowledge increase. So that it is most probable that you will have more extended results in America than here, because there are more workers, and it would be surprising if these men should not accomplish more than is done in the Rue de Jour. I have not seen a case of chronic adhesions absolutely cured anatomically, but I am quite ready to believe that it is possible. There is much more that I would like to say, but reserve it for a future occasion, perhaps. The possibilities of electricity are great. What is needed is original work in regard to its action.

PARIS, April 16.

GASTRO-ENTEROSTOMY AND PYLORECTOMY.

BY H. TUHOLSKE, M.D.,
PROFESSOR OF SURGICAL PATHOLOGY AND CLINICAL SURGERY IN THE MISSOURI MEDICAL COLLEGE, CONSULTING SURGEON TO THE ST. LOUIS CITY HOSPITAL, SURGEON TO THE ST. LOUIS POLYCLINIC AND HOSPITAL, ETC.

IN the beginning of October, 1889, I took charge of the case of O'N., a mechanic, aged thirty years, whom I had seen in consultation about five weeks previous.

History.—Of healthy parentage, the patient had enjoyed fair health until two years ago, when, he claimed, he contracted syphilis, and had a primary sore on the penis, which, two months later, was followed by mucous patches in the mouth and throat. There were no other demonstrable lesions. He was treated with mercury and potassium iodide. In the spring of 1889 the first symptoms of stomach trouble appeared. Patient would vomit, without much nausea, without any pain, and at irregular intervals, large quantities of fluid. Vomiting was usually followed by shorter or longer periods of comparative comfort. Treatment yielded no results to speak of, and on the recommendation of his medical attendant the patient tried a change of climate. Gradually losing in weight, he dragged on through the summer, and returned to his home in the latter part of September. It was then that I saw him in consultation and diagnosed an obstructive trouble at or about the pylorus. Toward the end of October I took sole charge of him, and found the following conditions: Height of patient, 6 feet 2 inches; weight, 118 pounds; emaciated to an extreme degree, the hands presenting the wrinkled, brawny appearance of starvation. Physical examination revealed nothing abnormal in the lungs or heart; no disturbance referable to the urinary apparatus; nervous system fairly normal; intellect bright and clear; abdomen flat, even sunken at the lower part; the epigastrium was prominent. The contour of the stomach was easily demonstrated, the greater curvature, beginning in the right hypochondriac region, passed through the epigastric region, reaching its lowest point two inches above the umbilicus, and, ascending gradually, filled the median half of the left hypochondriac region. Peristalsis visible through the parietes; no enlarged glands in the inguinal or supra-clavicular regions; no tumor. Patient was extremely weak, as he had been living on nutrient enemata for sixteen days, only small quantities of water having been occasionally administered by the mouth. Even then vomiting occurred every forty-eight hours. Bowels were obstinately constipated.

Diagnosis.—Pyloric obstruction and great dilatation of the stomach. Under the careful administration of beef-juices and peptonized milk by the stomach, patient gained somewhat and was able to sit up in bed, but vomiting occurred whenever the stomach became full. Nevertheless, he rallied so that after two weeks I felt justified in ordering washing out of the stomach to be performed every other day. Finally, my assistant, Dr. Perkins, reported that the long-suspected tumor could be felt low down in the right hypochondrium. I then informed the patient of the necessity of operative interference and urged a gastro-enterostomy. Under the washing-out treatment, however, he was improving wonderfully, and gained some twenty pounds during December, and returned to work in January. He would not entertain my proposition for the operation. The improvement was of short duration, and by the end of the month he was again in a state of great debility and emaciation, and, while lending a more willing ear to my proposal, insisted on trying the efficacy of the Hot Springs in Arkansas.

For a time he improved and sent glowing reports, but returned home March 25th almost dead. He now clamored for an operation. Rectal feeding and stimulants revived him somewhat, and on the 29th, at 9 A.M., with the patient in a miserable condition, after having washed out the stomach and bowels, I proceeded to operate, with the assistance of Drs. Carson, Brokaw, and the clinical staff.

Operation.—The incision, four inches in length, was made over the site of the tumor. The centre of the incision was two inches to the right of and on a level with the umbilicus and upon an imaginary line drawn from the centre of Poupart's ligament to the cartilage of the right ninth rib. The peritoneum was opened to the same extent, after having stopped all bleeding. I found the pylorus at once, presenting in the wound, without adhesions, freely movable, and about the size of a walnut. Considering the extremely weak condition of the patient, I had determined first to make the gastro-enterostomy, and, if the patient seemed able to bear it, then to resect the pylorus.

But a short time is required for a gastro-enterostomy with our improved technique. The introduction by Senn of decalcified bone apposition-plates marks an era in abdominal surgery. I have had the privilege of seeing him use the plates in an experimental operation upon a dog. Like most great devices, it is exceedingly simple. But for the difficulty of procuring the plates, and of proper size, when needed, their use would become universal. This difficulty has, however, been completely overcome by Dr. Brokaw's ingenious substitute. The segmented rubber ring (see THE MEDICAL NEWS, December 7, 1889,) can be rapidly made and of any

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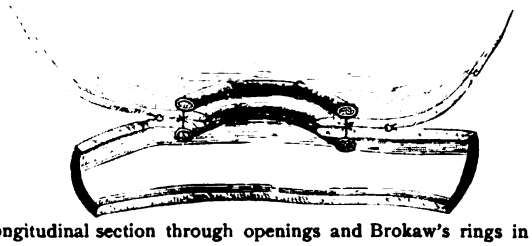
size, of a strand of catgut or a piece of rubber tubing. A ring composed of four or six segments is most readily applied, and, quoting Dr. Brokaw, is used as follows: "Compress the ring, pass it into the lumen of the bowel or stomach through the opening previously made, pass the threads at the end of the oval first, through the intestinal wall from within outward, then the lateral threads; make slight traction to ascertain whether the ring rests well in place, and proceed to the second. Apply this in the same manner, appose, and tie the apposition threads, after scarification of the marginal serous surfaces, as suggested by Senn."

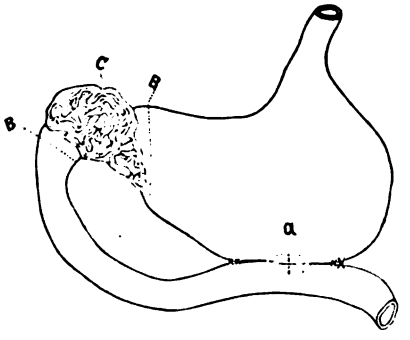
I now drew the stomach out of the cavity, covered and surrounded it with warm sponges, found the beginning of the jejunum without difficulty, brought it forward until it was above the middle of the great curvature of the stomach, and emptied the contents from about three inches, and placed the clamps in position. I then made an incision an inch in length on the convex border, compressed a segmented ring two inches in diameter into a long ovoid,

FIG. 1.



Longitudinal section through openings and Brokaw's rings in a gastro-enterostomy.

FIG. 2.

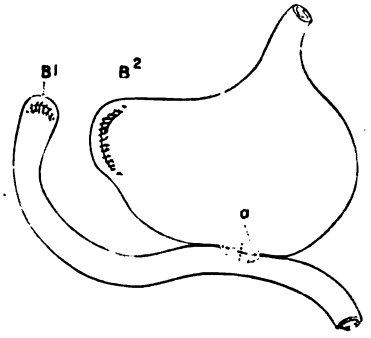


A. Anastomosis complete.
B B. Lines of excision.
C. Malignant growth.

introduced it into the gut, and passed the needles armed with fine, strong silk thread. A corresponding incision was then made in the stomach at the point indicated; a similar ring introduced, and the needles passed close to the ring at its outer circumference. I then secured the openings in both stomach and gut by interrupted sutures, tied the apposition threads, and completed the anastomosis by the addition of eight Lembert sutures surrounding the anastomosis.

The second step of the operation—the pylorectomy—then became comparatively simple. I separated the great omentum along the greater curvature and the gastro-hepatic along the lesser curvature of the stomach by cutting between double ligatures, as suggested by Billroth. I then applied clamps some distance from each side of the growth, and resected with the scissors. Then, an assistant holding the duodenum with the clamp, I passed a number of interrupted sutures, completely closing the bowel; then removed the clamp, invaginated the bowel, and secured broad peritoneal contact by interrupted Lembert sutures, closely applied. The stomach-wound was closed in the same manner.

FIG. 3.



A. Anastomosis.
B^1. Closed end of duodenum.
B^2. Closed pyloric end of stomach.

Three enlarged glands were removed with the omentum. The bleeding was slight. No stomach or bowel contents escaped into the cavity. After a careful toilet of the peritoneum I closed the parietal wound in the usual manner. Patient had a number of sinking spells, and whiskey and digitalis had to be administered frequently during the operation, which was completed in one hour and forty-five minutes. He seemed to react from the operation; there was no vomiting, and the intellect remained clear and calm. Pulse varied from 120 to 140 per minute. He complained greatly of pain and thirst during the day, the latter being relieved by warm-water enemata. During the night he constantly grew weaker, and died twenty-six hours after the operation. Microscopic examination proved the tumor to be epithelioma.

Remarks.—In attempting to gauge the merits of the various surgical procedures advised for the relief or cure of pyloric obstructions we at once meet with an all-important obstacle, viz., the limited number of reported cases. We find, therefore, not only great diversity of opinion on the subject, but diametrically opposed statements from the most illustrious in the profession. Some high authorities, who put before us the results of closest investigation, speak most discouragingly and doubt the propriety of the performance of pylorectomy.

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In Mr. Greig Smith's classical work on *Abdominal Surgery*, page 392, we read:

"With these results before us, we must admit that if pylorectomy is to be considered anything more than a 'mere surgical exercise,' it is to be contemplated only in a very carefully selected class of cases. If the patient is not in fairly good condition, if the stomach is greatly dilated, if the growth is large, fixed and displaced, the operation should not be contemplated. And even when the opposite conditions are present it is doubtful if it could ever be a surgeon's duty to advise the operation; he ought to undertake it only at the patient's urgent request, and after fully and honestly explaining to him the hazardous risk which he undergoes."

The inadequacy of the statistics on the subject may be readily appreciated by reading from the section on the surgery of the abdomen by Mears in the *Annual of the Universal Medical Sciences* for 1889, page 25.

Professor Buchanan, with regard to the propriety of performing the operation in carcinoma, quotes the opinions of Butlin, and of Billroth, as given by his assistant Salzer. The former says:

"The excessive mortality due to the operation, the rapidity of recurrence in what have appeared to be most favorable cases for operation, the return of the symptoms of obstruction in some, if not in many, of the cases, and the fact that there does not appear to be one case which can be claimed as a genuine cure, lead me to doubt whether the operation of resection of the pylorus for cancer is ever a justifiable operation."

Salzer states that

"Billroth does not only consider the operation of resection of the stomach a justifiable one, but he continues operating with good results in many cases. Of course, he does not operate in cases of carcinoma if there are already infiltrations and adhesions to the liver and pancreas. In these cases he prefers Woelfler's operation of gastro-enterostomy."

Mikulicz, of Cracow, collected thirty-two cases, of which only eight recovered from the effects of the operation.

The unfavorable results which have so far attended this operation may probably be attributed to the following causes, of which some may be classed as unavoidable, others as avoidable. First, and most important, the mutilation of an organ of such paramount importance; and secondly, the injury of greater or less extent inflicted on the sympathetic nervous ganglia. The former might cause a marantic condition later on; the latter, severe and fatal shock. Future statistics will determine the importance of these factors. Among other prominent causes are the long duration of the operation, lasting, in the hands of even the masters of the technique, three hours or more; imperfect sewing; an extensive separation of the omentum, producing gangrene of the colon; the numerous causes of sepsis, such as the escape of stomach- or bowel-contents into the peritoneal cavity. It is unnecessary to say, that the careful selection of cases is, *cæteris paribus*, of prime importance. The patient upon whom I operated presented locally the most desirable, constitutionally the most undesirable condition. At last, almost *in extremis*, pleading for the operation, I performed one which I claim has some decided advantages over those heretofore in vogue. The first step, the gastro-enterostomy, made in the manner described, probably does away with two important factors of failure, for it requires but little time, and fairly guarantees complete apposition and closure. In the future, with a very weak patient, I would defer the pylorectomy for two or three weeks. With the patient in an improved condition, this form of pylorectomy would appear less hazardous. Whenever a pylorectomy is indicated, gastro-enterostomy, followed by the resection of the pylorus, as described, appears the shorter, the more complete, the more secure, so far as closure is concerned, hence the better operation. When done for carcinoma, even if there is recurrence, obstruction, which causes the most disturbing symptom, would be prevented. But carcinoma of the pylorus, although the most frequent, is not the only cause of obstruction; simple stricture, external adhesions, and the pressure of a tumor may produce similar symptoms. An early and exact diagnosis, therefore, is of vast importance. I believe that just as soon as dilatation of the stomach, due to obstruction at the pylorus, has been diagnosed, it is eminently proper, with the consent of the patient, to make an exploratory laparotomy, and to examine the pylorus; if the cause of the obstruction be found in adhesions which can be severed, to sever them; or, if that be not feasible, to make a gastro-enterostomy with the apposition rings.

If due to a tumor which cannot be removed the same should be done. If the disease is confined to the pylorus, it is proper to open the stomach at a place convenient for a gastro-enterostomy, to introduce the finger through the opening and into the pylorus. If a simple stricture is found we should proceed according to Loreta, dilate, and close the opening in the stomach. If the obstruction is due to carcinoma, the opening should be used for a gastro-enterostomy, and the pylorus resected as suggested.

I hazard the opinion that operations for obstruction at the pylorus will yield better results in the future. We will operate upon patients in fairly good conditions and we will find large pyloric carcinomata with extensive adhesions as rarely as we now find very large stones in the bladder or huge ovarian tumors—such condition being diagnosed early and removed.

In conclusion I would mention, that after a number of experiments upon dogs, Dr. Brokaw, of St. Louis, found the segmented rubber ring of great

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value in circular pylorectomy. After resection, a segmented rubber ring is introduced into the cut extremity of the duodenum, the apposition threads passed through the intestinal walls one-half to three-fourths of an inch from the free edge. The stomach is then sutured, beginning at the lesser curvature, reducing the opening until it exactly corresponds to the diameter of the duodenum. Through the opening in the stomach a segmented rubber ring is now introduced, the needles are passed and the operation finished as in any other anastomosis. I believe that this method may find its uses in non-malignant obstructive strictures of the pylorus. For the carcinomatous obstruction, I think the operation which I have devised is preferable.[1]

THE HODGEN SUSPENSION-SPLINT.

BY H. H. MUDD, M.D.,
OF ST. LOUIS, MO.

THE chief reliance of physicians in the treatment of fractures of the femur appears to be upon Buck's extension, but with this method the necessary movements of the patient, the irregularities of the bed, with consequent difficulty in adjusting the padding, or the carelessness of the surgeon, not infrequently result in over-lapping or in "angling," with a resulting crooked and shortened bone. The after-care of a case treated in a properly adjusted Hodgen splint is so trifling, compared with that required by Buck's method, that I am tempted again to present the claims of the suspension-splint of Dr. John T. Hodgen. Surgeons use with Buck's extension from twelve to twenty pounds pull, and shortened legs attest its inefficiency. The comparatively perfect result to be obtained by the judicious use of a Hodgen suspension-splint is not, I believe, to be attained with any other method, and the amount of the extending pull need not exceed ten pounds.

Extension is so universally admitted to be of prime importance in the treatment of the fractured femur that I shall not here endeavor to prove its value, nor do I deem this the place to compare and discuss the relative merits of the various procedures resorted to in the effort to secure equable and continuous extension. Many and various are the methods devised. A description of Hodgen's suspension-splint is found in many of the text-books. Few authors, however, seem to appreciate fully the benefits to be derived from suspension and extension as combined in this splint; yet its use is certainly becoming widely extended, though rather by example than by force of authority. It is a splint which will win its way into favor by its own virtues after it is once understood by surgeons of mechanical tact. I hope, since the splint is simple in its construction and theory, to make its application and principles so plain that every surgeon can use it with comfort and advantage to his patient.

Simple and effective continuous extension was, I think, first obtained in oblique suspension by Nathan R. Smith, when he introduced his anterior splint, of which the Hodgen suspension-splint is a modification. The advantages of the Hodgen splint are:

1. Easy adjustment.
2. It leaves the thigh exposed to inspection.
3. The muslin supports on which the leg and thigh rest can be separately adjusted, so that the tension on any one of them can be easily changed.

This splint in the hands of an expert secures nearly perfect immobilization, with extension so equable and effective as to give practically perfect results; and the freedom of motion allowed the patient does not interfere with the union of the broken bone—the splint and leg move with the body of the patient. The only motion is at the hip-joint, and there is no possibility of angling at the fractured point by the dragging of the leg on the bed as the patient moves from one side to the other. The patient can sit upright in bed or use the bed-pan without disturbing the fracture.

Description.—The splint itself, as originally devised, is composed of a single piece of No. 2 wire, bent as shown in Fig. 1. The sliding hooks D D′ and E E′ are used for attaching the suspending cords to the splint. The use of the arch O is to maintain the proper width of the splint at its upper end, viz., 8 or 10 inches. This arch is loose and is easily slipped into position over the ends of the wire which form the splint before the latter is applied to the leg. The width of the splint at the foot is about 5 inches, and is determined by the bend in the wire which forms the body of the splint. The wire hooks E E′ and D D′ present at one end a free loop for the attachment of the supporting cords, while the other end is coiled somewhat snugly around the lateral bars of the splint at D and E. The lateral bars extend upward on each side of the leg, so that the two ends of the wire reach, the one to a point *above the pubes*, and the other, on the outside, *nearly to the crest of the ilium*. The bend of the splint at the knee permits slight flexion of the leg.

The distance from the foot of the splint to the bend in the knee is 22 inches. From the bend at the knee to the upper end of the splint is 20 inches. The suspending apparatus is composed of, first, the pulley A, which is fixed in a high framework extending 8 feet above the bed, or preferably, in the ceiling; secondly, of the perforated sliding block B and the cord B A C; thirdly, of the two cords D C E and D′ C E′, of equal length with a loop at each end for attachment to the wire hooks at D D′ and E E′. These cords are passed through

[1] Since writing the above I have read with pleasure that the same operation has been performed successfully by the eminent surgeon, Dr. Bull, of New York, on April 10th.

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a loop in the cord B A C at its end C. The suspension of the leg and splint is readily accomplished by sliding downward the block B on the cord B A C. The amount of the extension is determined by the degree of obliquity of the cord B A C. It is transmitted from the splint to the leg through the adhesive strip H, which, extending from one tuberosity

These tubes are of sufficient size to admit the terminal ends of the lateral bars, and by pushing in or pulling out the extremities of the lateral arms the length of the splint may be varied. Its width can also be changed by sliding the lateral arms into the hollow tube A A, which is furnished with thumb-screws at A and A. The hooks D D′ and E E′, for

FIG. 1.

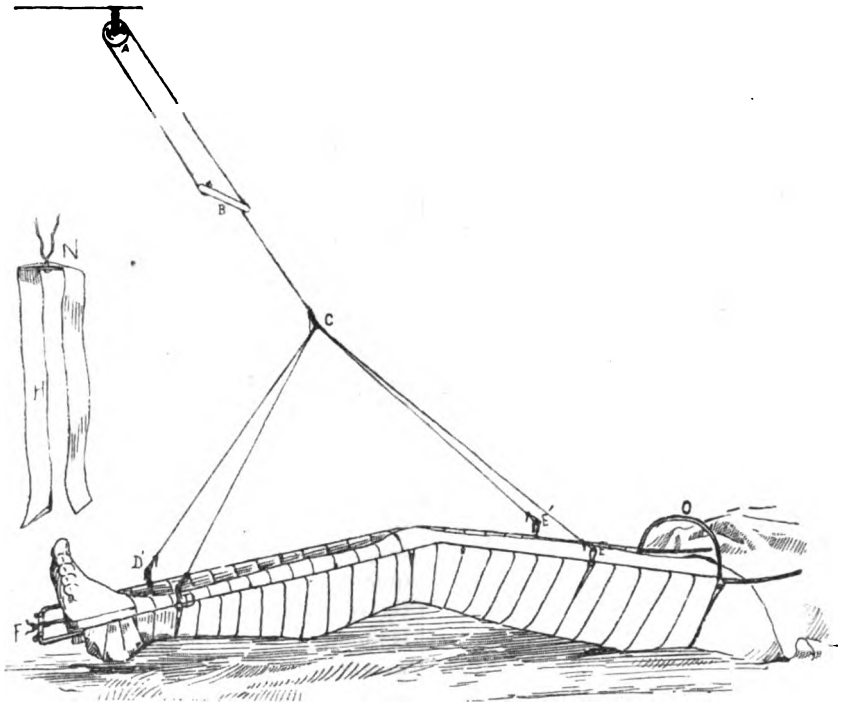
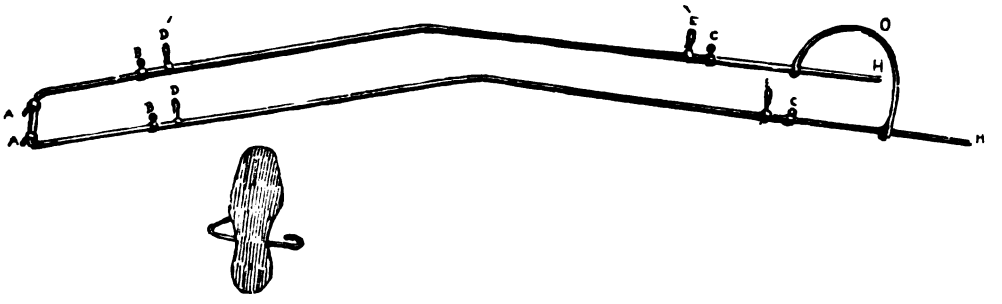


FIG. 2.



of the tibia to the other across the board N at the sole of the foot, is fastened by a cord to the cross-bar at F, and thus securely holds the leg in the splint.

The splint, as represented in Fig. 1, is the simple solid-wire splint, as above described, and is readily made by any blacksmith.

In Fig. 2 an adjustable splint, easily fitted to any leg, long or short, is shown. It is composed of hollow tubes and sliding-bars, as described below. The lateral bars B C are square tubes, furnished with thumb-screws at their extremities, B and C.

suspending the splint, slide on the lateral bars B C. but should be kept near the end of the hollow tubes B C. The splint is used in the same manner as the one before described.

Fig. 1 shows the splint in use. The leg is resting on muslin strips, which pass under it. These are secured by pins at each end, after overlapping the arms D E and D′ E′ of the splint. Each strip supports its proportion of the weight of the leg. These strips extend from the heel to the gluteal fold. The adhesive strip H (Fig. 1), softened by warmth or by turpentine, is applied to the leg, and secured in

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position by a roller, which extends as high as the knee. This strip secures the leg in the splint, since it is fastened by the cord and block N to the foot of the splint at F. The block N, at the sole of the foot, should be as wide as the adhesive strip, and about three and one-half inches long. It then protects the malleoli from the lateral pressure of the adhesive strip, through which the extending force is applied.

The Suspension of the Leg and the Adjustment of the Fracture.—The application of the Hodgen suspension-splint is simple, and in skilful hands painless. Suppose the leg, with its fractured femur, to be resting upon the bed. The adhesive strip H, with its foot-piece and cord, is placed in position, an assistant grasps the foot with one hand, and, with the other hand under the knee, lifts the leg from the bed, while at the same time he makes steady extension of the femur. The surgeon then applies the roller as high as the knee-joint, binding the adhesive plaster to the leg. The leg is again allowed to rest upon the bed, but the assistant maintains moderate traction on the foot, so as not to relax the extending force applied to the fractured bone. The splint is then put into position. A lateral arm is placed upon either side of the leg, and the cross-bar is brought close to the sole of the foot. The cord and block N, with the adhesive strip, is now fastened to the foot of the splint. Strips of muslin are passed under the leg—one at the ankle, one at the knee, and perhaps two under the thigh. These are secured by pins to the lateral arms of the splint, while it is held so that the inner arm extends above the pubes, and its outer arm, reaching nearly to the crest of the ilium, has its upper extremity not far from the anterior-superior spine of the ilium. The lower end of the splint is on a level with the malleoli. The inner wire arm may need to be shortened or bent upward, so as to give the patient opportunity to sit upright, but it should always extend well above the pubic bone. The leg can now be suspended by attaching the cords D C E and D′ C E′, and adjusting the slide B so as to lift the splint and leg from the bed. The cradle of cloth strips upon which the leg is to rest is now made complete by adding strips of muslin, and adjusting them to the outline of the leg, as indicated in the cut. No special or violent attempt at the adjustment of the fractured bone is made, except where there is marked lateral displacement, as in some transverse fractures. The free swing of the leg, and the efficiency of the extending force, secure a perfect adjustment in a few hours. The fracture "sets" itself.

The flexion of the leg on the thigh should not be very sharp, for if the bend approaches a right angle the elevation of the knee is necessarily great and most of the extending force applied to the thigh would be through the muslin strips on which the upper part of the leg rests (those just at and below the bend of the knee). The angle of flexion at the knee may be varied from that of the splint by lengthening or shortening the strips which support the thigh. The foot may be elevated or lowered and the support rendered by the muslin strips under the thigh varied, by sliding the loop at C downward toward the foot or upward toward the groin.

The flexion of the knee is only sufficient to put the leg in a comfortable position, relaxing slightly the tension of the hamstring and gastrocnemius muscles. The slight flexion of the thigh on the pelvis puts at rest the psoas and iliacus, and the rectus extensor of the thigh. The muscles are placed in a state of equilibrium.

External rotation, if it occurs, can be obviated by securing the foot to a foot-piece, or by a muslin strip passed around the outer border of the ball of the foot and fastened to the inner arm of the splint.

The degree of extension necessary to accomplish the result desired may be determined in part by the sensations of the patient. The position of comfort is often the position of safety, as extension is required only to overcome the tonic contraction of the muscles. The counter-extending force is the weight of the body. Much less extension is required in splints that suspend the leg and remove the resistance of friction of the leg on the bed than is required when the leg rests upon the bed, and weight and friction are first to be overcome. It is never necessary, when using this splint in an adult, to apply (as recommended by Hamilton when speaking of other methods of making extension) twenty pounds as an extending weight; or, as he states in his work on *Fractures and Dislocations*, published in 1880, "one pound for a child one year of age, two pounds for a child two years of age, and so on, adding one pound for each year up to the twentieth." An extension of twenty pounds, applied through an adhesive strip to the leg, and pulling upon the knee-joint and femur, is a serious trial to the patient's endurance, and it taxes the surgeon's ingenuity to maintain steadily such a force.

The amount of extension required in this suspension-splint is much less, being only from three to ten pounds, for there is no friction to overcome, and so long as the patient remains in bed there is no appreciable variation in the extending force provided the point of support is eight or ten feet above the plane of the bed. It is a quiet, persistent, non-irritating and effective pull. There is no perineal band to fret and worry the patient. The extending force is determined by two factors, and these are entirely within the control of the surgeon, viz., the obliquity of the extending cord and the

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weight suspended. The first can be varied by the relative position of the bed and the suspending pulley, and the latter can be increased, if desired, by placing sand-bags across the lateral bars of the splint.

It seems difficult for some persons to understand how extension can be applied to a fractured thigh by a direct traction upon the leg, without counter-extension through the perineal band. They fail to recognize the efficiency of the weight of the leg as an extending force and the stability of the body as a counter-extending force. The amount of the extending force that is transmitted through the adhesive strip in the suspension-splint, may be measured by substituting a spring balance for the cord, which in the cut connects the block N with the foot of the splint. A small portion of the extending force is, however, transmitted through the strips which support the limb in its cradle, and those who wish can, by mathematical formulæ, compute the absolute amount of the extending force obtained by oblique suspension.

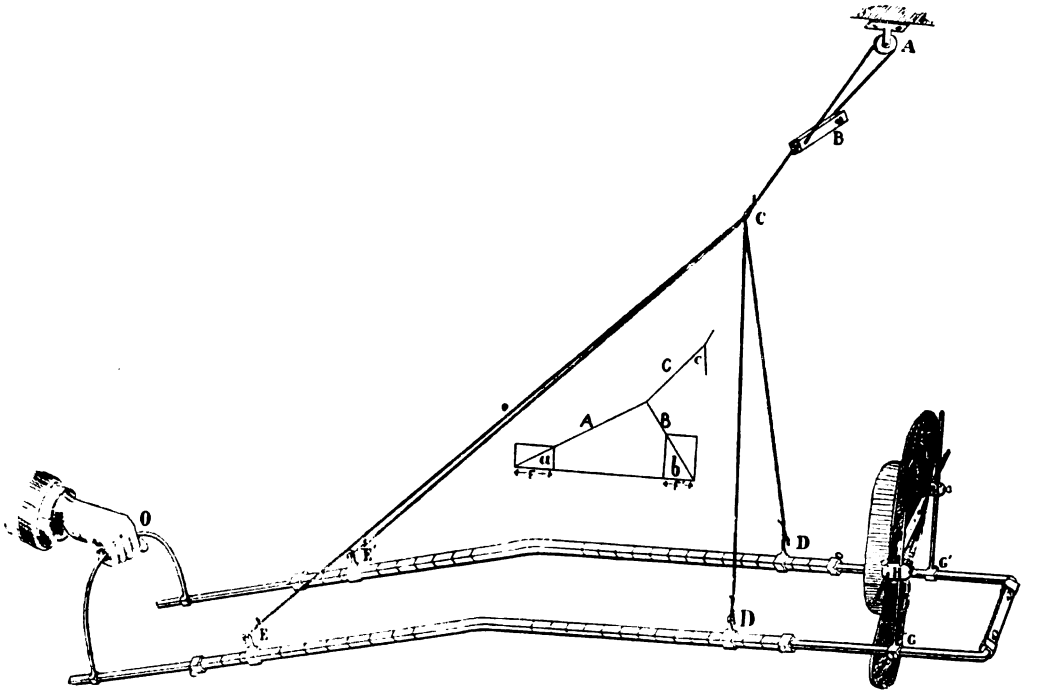
Professor Francis E. Nipher, of the Washington University, and Dr. A. K. Worthington, now of Denver, used the following formulæ for determining the extending force. The line D in the diagram (Fig. 3) represents, approximately, the line of the splint and the femur.

The pull on the cords C E and C E′ and also on C D and C D′ (Fig. 3), can be accurately measured. The angles a and b (see Diagram, Fig. 3) can also be measured. The traction force along C E and C E′ is represented by A, and that along C D and C D′ (Fig. 3) by B. The forces A and B being known as also the angles a and b, we can readily calculate the horizontal components F and F′.

The resultant of F and F′ will represent the direct traction force exerted along the line D, or the amount of efficient extension applied in the line of the femur.

In a particular case where the patient weighed 150 pounds, and the suspending cord, C (or in Fig. 3, A B C) formed an angle of 15° with the perpendicular:

FIG. 3.



It was found that the pull	A = 11.5 pounds.	
And the pull	B = 10.5	"
The angle	a = 40°	
The angle	b = 75°.	
Hence by trigonometry	F = A cos. a.	
And	F′ = B cos. b.	
Whence by substitution	F = 11.5 x cos. 40 = 8.8 pounds.	
" " "	F′ = 10.5 x cos. 75 = 2 7	"
Therefore the resultant of	F and F′ = 6 1 pounds.	

F and F′ act in different, opposing directions, hence their resultant is the difference between them, or 6.1 pounds, which represents the amount of the extending force applied to the femur in this case. If the angle C was increased to 36°, it was found:

That the angle a = 35°
" " " b = 105°.

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Here the forces F and F' are exerted in the same direction, since the angle b is greater than a right angle, and their resultant is the sum of the forces, which (by the same formula as before) is found to be 14.7 pounds. The weight of the leg was estimated at 21 pounds.

The loop C in the cord B A C (Fig. 3) is loose and can be slipped along the cords D C E and D' C E' so that the angle made by these cords with the splint can be changed with the obliquity of the suspending cord B A C. The lower leg should be parallel with the bed, while the heel is not more than two or three inches above the bed.

If the pulley through which the cord passes is fixed in a ceiling which is 9 to 12 feet high, a perpendicular line dropped from the pulley should fall beyond the foot of the adult patient. In the case of a child, where the weight of the leg is less, the obliquity of the cord should be greater. The obliquity of the cord should be sufficient to make an angle of from 15° to 35° with the perpendicular. If there is any tendency for the patient to slide toward the foot of the bed, it may be obviated by raising the foot of the bed by means of blocks. In the case of a child, it may be well to pass a cord loosely about the body under the arms, and fasten it to the head of the bed, to serve as a check to any great change in the position of the patient. The leg is open for inspection and the supporting strips can be readjusted as the parts atrophy. The slight natural anterior curve of the femur can be maintained. The circulation is undisturbed, for the nutrition is not interfered with by the pressure of retentive apparatus and it is as perfect as it can be during enforced quiet. The leg can be kept cool or warm as desired. The patient may sit up or lie down as comfort suggests. The bed-pan can be used without disturbing the fracture, and the best possible result in fracture of the shaft can generally be obtained, viz., no appreciable shortening and early union. This is obtained without bed-sores or any of the constitutional complications which are liable to follow confinement in a fixed position. The splint is well adapted to the treatment of all fractures of the femur, whether they are intra- or extra-capsular, through the trochanters, the shaft, or the condyles. The results of the treatment of fractures of the neck of the thigh in the splint are very satisfactory in the great majority of cases. Most of the unsatisfactory results obtained are probably due to imperfect adjustment of the fractured ends. The feeble aged persons who are most liable to this injury, derive comfort from its use and greater freedom of motion than they can enjoy with any other apparatus, or than pain will permit if allowed to go without treatment or a splint.

After a long experience with the splint in private practice and hospital work, and after having observed its employment by the late Dr. John T. Hodgen during the last fifteen years of his life, I know of but one practical difficulty which arises in its universal and immediate use in all fractures of the femur. This objection pertains only occasionally to the fractures of the middle third of the bone in children. These exceptions are rare, and if a perfect adjustment of the extending force to the necessity of the individual case could be obtained at once, they would be reduced to a minimum. The objection is found in the spasmodic contraction of the muscles, which at times is so frequent and violent, immediately after injury, that some lateral pressure is necessary for the comfort of the patient. This spasm may in part be controlled by lateral supports to the thigh or by permitting the leg to rest upon the bed for a few days with extension applied after Buck's method. No form of dressing will uniformly control it. After this irritability subsides, the leg is more comfortable and more efficiently treated in the suspension-splint. This clonic contraction of the muscles is more likely to be present if the extending force is in excess of the necessities of the case. The excessive tension acts as an irritant.

The only obvious change effected by the motion resulting from the spasm is an increase in the amount of the provisional callus. It does not delay union, but provokes by irritation an increased inflammatory deposit about the break. I find that a sand-bag partly full placed on the thigh while it is in the suspension-splint materially mitigates this spasmodic action. Fortunately, these cases are rare. Clonic contraction will, in isolated cases, occur with any splint and under any plan of treatment, for no lateral support or compression can prevent the contraction which accompanies a muscular spasm. Opiates are sometimes useful, in the case of nervous children, for a few days after such an injury is received. The plaster-of-Paris dressing is not, I think, admissible except in children less than eighteen months old.

This splint, and this manner of applying extension, afford a most perfect means of neutralizing the tonic contraction of the muscles which so often determines shortening. The oblique suspension gives continuous and equable extension of an amount sufficient to accomplish a perfect result, without the waste of any force, and it insures to the patient the most perfect liberty attainable by any known means compatible with comfort and safety.

The point of support, the pulley A, Figs. 1 and 3, should never be brought nearer the plane of the bed than eight feet. This gives the patient the full liberty of the bed without changing materially the extending force.

The foot-piece shown in Fig. 3 is one which I have used with some satisfaction in fractures of the neck

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of the femur. It is also useful where the splint is used in the treatment of compound fractures of the leg. It will prevent rotation, it obviates drooping or extension of the foot, and is easily adjusted.

Dr. J. Freund, of Champion, Michigan, has devised a foot-piece which answers a good purpose. It is held in position by two transverse slips of wood fastened by thumb-screws to the lateral wires of the splint. The inclination of the foot-piece is fixed by a third thumb screw, which controls the inclination of the foot. It can be used with either splint and is an effective foot-piece.

MEDICAL PROGRESS.

Magnesia-isinglass Bandages. — DR. JOSEF ENGLISCH states in a communciation to the *Wiener medicinische Wochenschrift* that in his experience isinglass is preferable to plaster-of-Paris for rigid bandages, on account of its lightness and extraordinary firmness. According to the author, it is especially adapted to cases in which the patient intends entirely or partly to follow his usual occupation. Its disadvantage is, that it takes a long time to harden, and he mentions this as the reason why it has not yet been generally adopted. To obviate this disadvantage, he has used for the last eight years magnesia isinglass, which he claims is very satisfactory. Four parts of a solution of soda isinglass are by slow boiling reduced to the consistence of thick syrup, and then triturated with one part of finely powdered magnesia, till the mixture becomes whitish with a slight yellow tinge. The unrolled bandages are well stirred in this pultaceous mass, and then carefully rolled upon a wooden roller. The prepared bandages must not be exposed to the air for more than fifteen or twenty minutes, and before their application the limb is covered with a double layer of an ordinary calico bandage. No cotton-wool or flannel must be used. Four or five layers of the magnesia isinglass bandage are sufficient for the arm, but five or six layers are required for the lower extremity. When the apparatus is intended to remain undisturbed for a longer time than usual, strips of the same material, or of thin leather or cardboard, may be inserted between two successive layers. From ten to twenty minutes after its application the apparatus ceases to be sticky, and in from three to ten hours, according to the temperature of the room, it is perfectly hard.—*Therapeutic Gazette*, April 15, 1890.

The Use of Iodol in Syphilis.—DR. SZADEK, of Kiew (*Therapeutische Monatshefte*, April, 1890), has employed iodol externally in a number of cases of syphilitic ulceration and concludes:

1. That the tertiary gummatous ulcerations heal very rapidly under the application of iodol, and that the drug acts as a specific.

2. That the effect of iodol on soft chancres and open buboes is less satisfactory than that of iodoform, and it requires a longer time to effect a cure.

3. The absence of disagreeable odor makes the drug much preferable to iodoform, particularly in private practice.

Internally the author administered iodol, in doses of from 5 to 15 grains three times daily, to 22 patients suffering from syphilis, 5 with secondary manifestations, and 17 with tertiary. No acne or other disagreeable symptoms were produced and the influence on the disease was marked, though not as rapid as that of potassium iodide. He thinks that it is to be preferred to the potassium salt where a rapid and energetic action is not important.

The Treatment of Varices by Injection.—According to the *Wiener medicinische Presse* MOLLIÈRE employs the following coagulating injection in the treatment of varicose veins:

℞.—Iodine	1 part.
Tannic acid	9 parts.
Distilled water	10 " —M.

This solution, it is said, is not irritating and quickly causes coagulation of the blood. For half an hour before the operation the patient is required to walk about in order that the varices will be distended. A moderately tight band is then placed around the limb above the point chosen for the operation, and one drop of the solution is injected into the most prominent vein. On withdrawing the needle the orifice in the skin is closed with iodoform collodion. The bandage is allowed to remain in place and the patient is required to keep absolutely quiet for fourteen days. At the end of this time the vein is felt under the skin as a cord and gradually diminishes in size. The author has had no bad results from this method of treatment.

Peruvian Balsam in Local Tuberculosis.—According to the *Provincial Medical Journal* DR. JASINSKI, of Warsaw, has used Peruvian balsam in thirty-one cases of local tuberculosis of the bones and skin with excellent results. The drug was used either in substance or in an alcoholic mixture, and was in some cases applied as a dressing, in others was injected into tuberculous cavities. In all but one of the cases healing ensued more or less rapidly.

The Inefficiency of Sand Filters.—DRS. FRÄNKEL and PIEFKE, of Berlin, have recently made an exhaustive study on the filtration of drinking-water through sand (*Zeitschrift für Hygiene*, No. 1, 1890). Their experiments conclusively prove that the danger of infection from impure water is only slightly reduced by filtration through sand; bacteria passing through at all times, but in larger numbers just after the filter has been cleaned and again after it has been in use for some time.

Intestinal Diseases of Infants.—In an interesting article published in the *Archives of Pædiatrics*, May, 1890, DR. W. S. CHRISTOPHER ably advocates the theory that all the so-called summer complaints of infants are due to ptomaine poisoning. The following is a summary of his conclusions:

1. Various forms of abnormal fermentation occur in the bowels, and when they occur in infants, and produce symptoms, they constitute the immediate cause of the collection of diseases known as summer complaint.

2. Summer complaint so defined includes putrefactive constipation and all forms of diarrhœa and dysentery

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not diphtheritic in origin nor symptomatic of septicæmia.

3. The three great predisposing causes of summer complaint, viz., hot weather, overcrowding, and bottle-feeding, are to be regarded as acting solely as adjuvants to fermentation.

4. The diet during summer complaint should be determined entirely by the conditions within the bowels, and not by theoretical ideas as to Nature's food.

5. At least two well-marked forms of abnormal intestinal fermentation may be recognized clinically, viz., the putrid and the acid.

6. In the putrid fermentation, carbohydrates should constitute the food, and in the acid form albumin should be the only food.

7. Milk, containing, as it does, both proteids and carbohydrates, should be prohibited in all forms of intestinal fermentation. If properly sterilized, other food can be given; nursing babies with severe summer complaint should be taken from the breast.

8. All food administered, of whatever type, should be aseptic.

9. In addition to regulating the diet on the foregoing principles, the treatment should include laxatives and intestinal antiseptics.

10. The lesions are to be regarded as the results of the fermentation, and are more marked in proportion to the duration of the disease.

11. The lesions assist in prolonging the disease, and in all probability act by providing a habitat for the microörganisms, and by their secretions furnishing the germs with material with which to maintain their biological activity.

12. In chronic cases, where well-marked lesions may be supposed to exist, lavage of the large intestine and of the stomach, with appropriate antiseptics, is indicated.

13. Opium is contraindicated except in persistent acid fermentation which threatens to produce anatomical lesions.

The Abortive Treatment of Herpes.—M. LELOIR employs the following solutions in the abortive treatment of herpes:

℞.—Resorcine	30	grains.
Hydrochlorate of cocaine	7½ to 30	grains.
Tannic acid	1½	drachms.
Alcohol (90 per cent.)	3	ounces.—M.

or

℞.—Hydrochlorate of cocaine	15	grains.
Extract of cannabis indica	150	grains.
Spirit of peppermint	150	minims.
Alcohol (90 per cent.)	3	ounces.—M.

Bryonia Alba as a Hæmostatic.—According to PROFESSOR PÉTRESCO, of Bucharest, bryonia alba is a common remedy in Roumania for the arrest of hæmorrhage, and he has made a number of experiments on man and animals to determine its value (*Les Nouveaux Remèdes*). He found that it caused marked contraction of the capillaries, and was surprised at its power in arresting hæmorrhage. His preparation was made by boiling 6 drachms of the dried root in 10 ounces of water until the decoction was reduced to 5 ounces. After filtration and the addition of sugar this amount may be given in three or four doses at intervals of half an hour.

He has also treated cases of metrorrhagia, hæmoptysis, hæmatemesis, and epistaxis with the alcoholic extract in doses of 30 grains daily, and places the drug first in the list of hæmostatics.—*Medical Chronicle*, April, 1890.

Bromide of Ethyl Anæsthesia.—For nearly two years DR. E. HAFFTER employed bromide of ethyl as an anæsthetic, and during that time he has administered it to more than 200 patients (*Correspondenz-Blatt für Schweizer Aerzte*, March, 1890). He believes it to be a safe and valuable anæsthetic for minor surgical operations. Merck's preparation is the best according to the author, and its purity can be determined by the fact that if poured upon the hand it should evaporate rapidly and without leaving any residue; that if shaken with water and filtered, the filtrate should be neutral, and give no reaction with nitrate of silver; and that the addition of concentrated sulphuric acid should not cause a brown color to appear.

The author concludes his paper with the following summary:

1. Bromide of ethyl acts with great rapidity, and usually without a period of excitement; it is perfectly safe when used in small amounts, and there are seldom any unpleasant after-effects.

2. The best method of administration is to pour the entire quantity to be used (1 to 5 drachms) on an impermeable mask, which is placed close to the patient's mouth and nose.

3. In most cases the operation can be begun in from fifteen to twenty seconds after the first inhalation, though the duration of anæsthesia will be very short, and only suitable for minor operations, opening abscesses, etc.

4. There are a few patients, chiefly alcoholics, who cannot be anæsthetized by the agent.

5. There are no contra-indications to the use of bromide of ethyl employed in small amounts and for short operations.

Prescription for Pruritus Vulvæ.—The following formula for pruritus vulvæ is quoted in the *Kansas City Medical Record*:

℞.—Carbolic acid	16	grains.
Dilute hydrocyanic acid	2	drachms.
Tincture of opium, Glycerin	of each ½	ounce.
Distilled water sufficient to make	4	ounces.—M.

To be applied as often as required.

Antiseptic Application for Diphtheria.—The following antiseptic mixture is recommended as an application to diphtheritic patches (*Internationale klinische Rundschau*, April 13, 1890):

℞.—Borate of sodium, Chloride of calcium	of each 75	grains.
Carbolic acid	3½	"
Glycerin	2½	drachms.
White honey	3½	ounces.—M.

To be applied by means of a soft brush.

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SATURDAY, MAY 10, 1890.

PARACENTESIS THORACIS.

LIEBERMEISTER'S communication upon pleuritis, referred to in our last issue, ably discusses the question of operative interference with effusions. While nothing new is brought out, the present state of the best professional opinion is clearly and judicially set forth.

Paracentesis has become more frequent since improvement in operative methods has diminished the liability to untoward result. Still, considerable difference of opinion exists concerning the indications for removal of non-purulent effusions in acute or subacute cases.

In order to render the indications entirely clear, Liebermeister argues, it is necessary to bear in mind that, with removal of the exudate, the disease is by no means brought to an end; but, on the contrary, so long as inflammatory processes in the pleura continue, the effusion will likewise continue to reaccumulate. On the other hand, it must be taken into consideration that in certain cases the operation is the direct means of saving life; and that, in many other cases, only through paracentesis can a favorable prognosis as to ultimate result be given. An urgent indication for operative interference is presented when an extensive effusion seriously embarrasses respiration or circulation. If the interference with respiration has not reached a high grade, and especially if during rest there is no considerable dyspnœa, the indications are not so urgent. So long as the exudation is increasing, and febrile symptoms continue to be manifested, paracentesis can be of but temporary benefit, because, as a rule, the exudation soon again reaches and even exceeds its former height. Moreover, when the effusion has reached its greatest point, it is in most cases judicious to wait a short time and observe whether resorption will not take place, either spontaneously, or under the influence of sorbefacient remedies. In this way many cases reach perfect recovery without unpleasant sequelæ.

One must not wait too long, however, for there is danger that the elasticity of the compressed lung may be so seriously damaged that complete re-expansion is no longer possible. How long the lung may bear compression without losing its elasticity cannot be definitely stated, but Liebermeister would say that we can no longer expect perfect re-expansion when an extensive effusion has remained within the pleural sac longer than four to six weeks. Thus, paracentesis must sometimes be performed not with the idea of permanent result, but for the purpose of bringing about, if only for a time, re-expansion of the lung, and thus averting the danger of complete loss of elasticity.

The period of expectancy, too, varies in individual cases with the individual indications. With small effusions, one can wait longer in the hope of absorption; on the other hand, when the exudation fills the entire pleural cavity, it is only in children that complete resorption can under any circumstances be expected. Furthermore, extensive exudation may suddenly and unexpectedly place life in immediate danger; so that in these cases, as a rule, paracentesis should not be delayed. Above all, must the operation be immediately undertaken when marked dyspnœa is manifested, even during perfect rest, or when the circulation is seriously interfered with. As a general rule, it may be stated that too early a resort to paracentesis is less to be deprecated, and less likely to be dangerous, than too long a delay. Purulence of the effusion is, in itself, sufficient indication for operation.

Paracentesis may be performed in either of two ways: The smallest possible opening, sufficient to secure removal of the fluid with the help of aspiration, may be made with trocar or needle, and this opening closed immediately after the operation; or the so-called radical operation may be made. In

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the latter, a large opening is made in the wall of the thorax, and is kept patent. According to Liebermeister, it is best performed by resection of one or more ribs. The rule may be laid down that aspiration is the best procedure for non-purulent effusion, resection and drainage for purulent effusion. In either case, as a matter of course, strict aseptic precautions must be taken; the skin at the point of operation, as well as all instruments employed, being thoroughly disinfected.

Considerable difference of opinion has been expressed as to the effect of entrance of air into the pleural cavity during paracentesis. Repeated experience, on the one hand, has shown that this accident is often attended with very serious results, and not seldom quickly followed by death. On the other hand, certain surgeons assert that air may be allowed to enter the pleural sac during paracentesis without fear. Liebermeister would reconcile these contrary opinions by suggesting that the latter surgeons have most frequently, or even exclusively, had to deal with old empyemas, which must be managed in every respect as other large abscesses. A large opening is made, through which air must necessarily enter, and if sufficient care be taken to keep the region of operation aseptic air is not to be feared; for in such cases the pleura is thickened, and overlaid with inflammatory tissue, and for this reason but slightly irritable. Matters are very different, however, in acute pleurisy, and especially in a case with sero-fibrinous exudation; and it is in the latter class of cases, as repeated experience teaches, that entrance of air may be followed by fatal results, and is to be most scrupulously guarded against.

In Liebermeister's clinic, sero-fibrinous exudations are, as a rule, aspirated in the following manner: The patient lying in bed in a comfortable position upon his back with a somewhat elevated trunk, the thorax is penetrated by a hollow needle connected with a long rubber tube through which the fluid is allowed to siphon out into a vessel placed upon the floor. The rubber tube is interrupted by a section of glass tubing through which the passage of the fluid can be observed. It is sometimes desirable, but with copious effusions not absolutely necessary, to fill the tube and needle before operation with carbolic acid solution or other antiseptic fluid which is retained by compression of the tube and allowed to flow out at the moment of puncture. Entrance of air into the pleural cavity is by this means absolutely prevented. Before use, the needle is disinfected with boiling water and the tubing with carbolic acid solution. The skin at the site of puncture is carefully cleansed with alcohol, ether, carbolic acid solution or corrosive sublimate solution. The puncture is made as a rule in the 4th, 5th, or 6th intercostal space, midway between the mammary and axillary lines. As a usual thing, the exudation is not entirely removed, the procedure being interrupted as soon as the lung has sufficiently expanded, or when somewhat severe paroxysms of coughing occur. One or two quarts are usually drawn off at a time. When reëxpansion of the lung is attended with difficulty, it is judicious to remove but a small quantity of fluid at first, and after a while to repeat the operation. If after aspiration the effusion again reaches its former height, experience teaches that it is still judicious to wait; for resorption will soon begin. Only in case respiration again becomes seriously embarrassed should the operation be repeated.

A trocar may sometimes be employed in place of the needle, the canula having a second branch to which the siphon tube is attached. This is especially applicable in cases where it is intended to remove the effusion completely; because in such cases the lung in its expansion might be wounded by coming in contact with the point of the needle.

Special consideration must be given to those cases in which the effusion is so limited that no excess of pressure over the pressure of the atmosphere on the pleural cavity is developed, but in which on the contrary a so-called negative pressure exists; as also to those cases in which the effusion has been in great measure re-absorbed, in consequence of which the intra-pleural pressure has again been rendered negative. In such cases, as may be understood from reflection upon the fact that but little or no displacement of neighboring organs has taken place, paracentesis will be but seldom indicated. If, however, it be attempted with simple puncture or the use of the trocar, the fluid will not flow through the siphon, but on the contrary air will be aspirated into the pleural sac. In such cases it is necessary either to fill the tube before making the puncture or to employ other means of creating a vacuum, as in the aspirators of Bowditch and of Dieulafoy. As a rule, however, unless decided aspiratory force is to be employed, Liebermeister considers these apparatus much less convenient than the simple siphon. When an aspirator is employed it should be used with great caution: for if the apparatus is mechani-

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cally perfect, a pressure of one atmosphere may develop, more than fifteen times that which is exerted by the column of liquid of 40 to 60 cm. in the depending siphon tube. Such a pressure must, if the lung is not capable of prompt and sufficient re-expansion, cause rupture. In this way, Liebermeister would explain the not very rare cases in which pneumothorax has been observed after aspiration of a pleural effusion, notwithstanding the fact that entrance of air from without has been prevented. This danger of rupture of the lung can be avoided if the aspirator be not too rapidly used and sudden strong pressure never allowed. The appearance of blood in the aspirated fluid is a signal for immediate cessation.

Among the ill results which may follow paracentesis may be noted pulmonary œdema, which is to be explained by removal of pressure from the vessels of the compressed lung, permitting transudation of fluid through their walls. This is manifested by copious expectoration of frothy liquid at times somewhat blood-stained. It is also possible that this may in part be aspirated into the sound lung and bring about danger of suffocation. Less frequently, symptoms of œdema are manifested in the sound lung. In certain cases in which thrombi have formed in the heart or in the constricted branches of the pulmonary artery, the freer circulation following paracentesis may lead to dislodgement, giving rise, in exceptional instances, to hæmorrhagic infarcts in the lung, or other manifestations of embolism. Too rapid expansion of the lung may cause severe and distressing paroxysms of cough, an indication for slow and deliberate procedure, or as already noted, for interruption of the operation.

REVIEWS.

A SYLLABUS OF OBSTETRICAL LECTURES IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA. By R. C. NORRIS, A.M., M.D. Philadelphia: W. B. Saunders, 1890.

IN the short space of 154 pages Dr. Norris has placed a very thorough and useful summary of the lectures of Professor Hirst in the University of Pennsylvania, and has certainly succeeded in producing one of the best, if not the best, book of its kind which we have yet seen. Unlike many books of its size which attempt too much, Dr. Norris seems to have possessed the knack of putting in just the right amount of information to be of service to the student and not so much as to make him think that he knows everything, when in reality he knows comparatively little.

No student can read this book without feeling the necessity for a larger work, yet it will give him the hooks upon which he may hang the fruits of his studies when they become sufficiently ripe for him to consider them as ready for permanent assimilation.

THE MEDICAL ANNUAL AND PRACTITIONER'S INDEX FOR 1890. New York: E. B. Treat & Co., 1890.

AT the present time the chief aim of several prominent publishers seems to be the placing upon the market of books which will contain in a brief, concise manner the chief points of progress in medicine during the past year. The one which is before us seems to be an improvement upon that of 1889, but, at the same time, we think it is to be regretted that the arrangement of the type and the character of the printing are not better than they are. These have little to do, however, with the value of the material which it contains, and concerning which many of our readers are already familiar. The changes which have been made in the present issue consist in a still further extension of the pages of the book by the appointment of collaborators upon the subjects of electro-therapeutics, life insurance, and thermo-therapeutics. Altogether the book is one which, when used in conjunction with several other works of the same kind, will place before the physician a large amount of information which he could only obtain otherwise through very wide reading and by subscribing to a large number of journals.

SOCIETY PROCEEDINGS.

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, April 7, 1890.

JOSEPH HEARN, M.D., IN THE CHAIR.

DR. JOHN B. ROBERTS reported

A CASE OF SUPPURATION IN SECONDARY CARCINOMA OF THE CERVICAL GLANDS.

Some time ago a man had been brought to him with a small ulcerated nodule on the left side of the upper lip and with a mass of enlarged glands on the left side of the neck below the angle of the jaw. The history, which was rather indefinite, was that about a year or two previous the man had received an injury near the mouth and that this had not healed, or if it had, there remained thickening and hardening. Nothing was done for this, and, later, enlargement of the glands of the neck appeared. He was seen by Dr. Keen, who, according to the patient's statement, advised removal of the cervical glands. For some reason he then came to Dr. Roberts, who considered the case to be one of epithelioma of the lip with secondary involvement of the glands of the neck, and advised against any operation, because he believed it impossible to remove thoroughly the infiltrated tissue. He sent the man to Dr. Mears, who thought that the glandular tumor could be removed, and that it was probably due to tubercular disease, the man having a cicatrix on the neck where a gland had suppurated in early childhood. The patient was then admitted to a private room in St. Agnes's Hospital and carefully watched, anti-syphilitic treatment being tried during this time. In a short time, however, he left the

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hospital. A few weeks later it was evident that there would be suppuration in the tumor in the neck, the nodule on the lip remaining unchanged. He was again seen by Dr. Mears, who incised the cervical swelling and scraped away a quantity of softened tissue and treated the man on general principles. Subsequently the glands increased in size, and it was decided to excise the tumor of the lip as a diagnostic measure. An assistant made some sections of the excised nodule, which were shown under the microscope. Dr. Mears had some slides prepared of the matter removed from the glands, but, unfortunately, he was absent and had not sent the slides. The subsequent history of the case is that the glands above the clavicle began to enlarge and the side of the neck presented the appearance commonly seen in secondary glandular involvement of carcinoma of the lip. The patient has since died with swelling and tumefaction of the front and side of the neck.

Dr. Roberts thought that the clinical history clearly proved that this was a case of epithelioma of the lip, and that the suppuration occurred in the glands secondarily involved. Such a complication is rather unusual, and may, perhaps, have been due to the fact that these glands had been the seat of tubercular disease in early life; the irritation of the epithelioma lighting up the old trouble and leading to suppuration.

DR. O. H. ALLIS, in discussing this report, said that he had seen one case in which suppuration occurred in carcinoma of the cervical glands, but in that case the disease was primary.

DR. DE FOREST WILLARD said that some some six years ago a careful surgeon had removed an epithelioma of the lip. A year later the glands in the submaxillary region were involved and the growth had returned at the seat of operation. One of the glands in the submaxillary region suppurated and discharged a considerable quantity of creamy pus. The patient finally died from these secondary growths involving the submaxillary and cervical glands. He saw no reason why the irritation of an invading growth, like that of secondary deposit, should not set up an inflammation in the glands which would result in true suppuration. Such pus formation is not the same as cancerous suppuration; it is a simple inflammation set up by the irritation, and may, perhaps, involve parts of the gland which are not even the seat of cancerous deposit.

CORRESPONDENCE.

ST. LOUIS.

To the Editor of THE MEDICAL NEWS,

SIR: Some weeks ago there was in the St. Louis poorhouse a patient who presented some peculiar and interesting symptoms. He had peculiar recurring spasmodic paroxysms involving first the left platysma, then the flexors of the left hand and arm, then those of the left lower extremity, then crossing over and involving the right lower limb and usually extending no further. The first symptom, which appeared a number of months prior to the development of the spasms, consisted in an involuntary clasping of the hand upon some part of the chest or neck, continuing for several minutes and then relaxing. The movements occurred once or twice daily, later more frequently, and as time went on spasmodic movements and contractions occurring.

In the early part of his affection he was seen by Dr. L. Bremer, of this city. Later he went to the East, visited New York and Philadelphia, and was treated there with no material benefit, and finally returned to St. Louis. The attention of Dr. A. B. Shaw, one of the consulting physicians of the poor-house, was called to the patient by Dr. Fleming, the physician in charge and by Dr. Walters, one of the assistant physicians at the Female Hospital near by. Dr. Walters suggested that the case was one of myotonia. Dr. Shaw concurred in the diagnosis, and after watching the case with some care presented the man before the St. Louis Medical Society as a case of that rare affection, and made a variety of electrical tests which he thought demonstrated the correctness of the diagnosis. Drs. J. K. Bauduy and C. H. Hughes took part in the discussion of the case and accepted the views of Dr. Shaw. Dr. L. Bremer, on the other hand, recognizing the patient as the one whom he had formerly treated, took a different view of the case, and very positively and emphatically disputed the diagnosis. He denied the significance of the electrical tests and asserted that the symptoms had been incorrectly interpreted. When pressed for another diagnosis, he simply said that he could not yet make a positive diagnosis, but that it certainly was not myotonia. The discussion was carried on for several meetings with considerable interest, and those who were present assure me that Dr. Bremer was treated with scant courtesy by some of the other specialists.

Later Dr. Bremer removed the patient from the poorhouse and kept him for some weeks at a private hospital that he might have the opportunity to study carefully the symptoms, make exact tests, and reach a positive diagnosis.

While he admitted the absence of one of the usually most marked and earliest symptoms of cerebral tumor, he finally concluded that the symptoms were only to be explained by the presence of a tumor in the motor area at the centre for movements of the platysma. He presented the patient and elaborated the course of reasoning by which he had reached his diagnosis at a meeting of the Medico-Chirurgical Society, closing with the remark: "The neurologist has located the lesion. It remains for the surgeon to operate."

This was undertaken by Dr. N. B. Carson, on March 26th, at the St. Louis Mullanphy Hospital. He removed a disk one and one-half inches in diameter and then enlarged the opening with chisel and hammer and removed a cystic growth about the size of a small hickory-nut from the point which Dr. Bremer had assigned as its site.

At the meeting of the St. Louis Medical Society, Saturday, April 5th, Dr. Bremer presented a detailed report of the case, illustrated with large drawings, reproduced from instantaneous photographs, and colored drawings showing the microscopical structure of the growth, which was pronounced by Drs. Bremer and Dean to be a cavernous angioma.

Dr. Carson reported the operation and announced that the patient was doing well, the wound healing by first intention, with no elevation of temperature, and that there had been no recurrence of the spasms since

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the operation. Following the report of the case by Drs. Bremer and Carson, Dr. Shaw took the floor. He complimented Dr. Bremer on his diagnosis, though he thought the symptoms were hardly such as to warrant it, and congratulated him upon the successful result of the operation as confirming the diagnosis. Nevertheless he himself still believed that the patient did present the condition of myotonia. Whether this resulted from or was simply concurrent with the tumor he could not say, but he was as sure of the existence of myotonia then as Dr. Bremer had been of its non-existence. Dr. Hughes took much the same position.

The St. Louis College of Physicians and Surgeons is again attracting a good deal of attention in the local profession. Seven of the professors who took chairs in that institution at the beginning of the last course of lectures have resigned. These are Drs. Y. H. Bond, A. M. Carpenter, Charles Barck, Hugo Summa, P. French, I. N. Love, and J. R. Lemen, who filled respectively the chairs of gynecology, principles and practice of medicine, ophthalmology and otology, physiology and histology, surgery, diseases of children, therapeutics, and physical diagnosis. Besides these Dr. C. H. Hughes, who had been notified of his proposed election to the new professorship of diseases of the nervous system, when he heard of the action of these gentlemen, sent word to the trustees declining the proposed honor.

The reason for the action taken by these gentlemen as stated by themselves is that an amendment to the constitution under which the institution acts has been adopted, by which "The appointment of all members of the faculty shall be made annually at the meeting of the Board of Trustees. The Dean, with the concurrence of the executive committee, shall nominate for approval by the board, all those who are to compose the faculty for the ensuing year."

The aforesaid executive committee consists of Dr. Louis Bauer, Dean, his son Dr. Joseph L. Bauer, and Dr. A. S. Barnes. The only other member of the faculty who has a voice in the board of trustees is Dr. C. W. Cale, who graduated at the institution three or four years ago, and was a special pupil of Dr. Bauer. From this it is apparent that the chairs in the faculty are held for periods of one year only at the individual behest of Dr. L. Bauer, a "man who," in the words of one of his former associates, "came to St. Louis and attacked its best surgeon, Dr. Hodgen, in a manner so contemptible that Dr. Bauer was kicked out of the St. Louis Medical Society."

The most remarkable fact in this statement of those who resigned is that this condition of things came to their knowledge only after they had undertaken their work for the year. It was generally understood by the profession long ago, and much surprise was expressed when these gentlemen consented to enter the institution under such circumstances.

In an interview with a representative of the daily press, Dr. Bauer cast a slur upon the Beaumont Medical College by a remark to the effect that it was organized by a number of ex-professors of the College of Physicians and Surgeons who had resigned upon ascertaining that they were to be dropped.

In response to a demand from a member of the Beaumont faculty, Dr. Bauer sent a card to the daily paper above referred to, stating that only three of those who withdrew from the faculty of the College of Physicians and Surgeons six years ago had entered into the organization of the Beaumont Medical College.

The latest phase of this matter appears in the filing of a petition in the circuit court for the incorporation of a new medical college to be called "The Marion-Sims Medical College." The petitioners are those who resigned from the College of Physicians and Surgeons with Dr. Hughes, who declined a professorship. It can hardly be said that another medical college in our city is a long-felt want except on the part of those who are anxious to have the title "Prof." prefixed to their names.

A patient by the name of Brennan, who has been for some months past at the Quarantine Hospital, died Tuesday, April 8th, of leprosy. His case has been discussed by the medical societies and has been the subject of dispute and even of litigation. He had been pronounced a leper by those most competent to diagnose that disease, and as such had been taken in charge by the health department of the city and sent to the Quarantine Hospital. Repeated attempts were made by those who could not accept the diagnosis to have him released, but they never succeeded in convincing the authorities that an error had been made, and he was cared for in what was deemed the best way to prevent him from becoming a source of danger.

At the annual meeting of the Augusta Free Hospital Association satisfactory reports were presented by the several officers.

Mr. Charles Parsons offered to give to the hospital $15,000 upon condition that as soon as possible the name of the institution shall be changed to the "Martha Parsons Free Hospital for Children" with a pledge that that name shall be retained as long as the hospital shall exist. The association voted to accept the offer of Mr. Parsons, and the necessary steps to effect such change of name will be taken forthwith. The name is to be given as a memorial of Mr. Parsons's deceased wife, who was actively interested in the founding of the hospital.

HAVANA.

The First Cuban Medical Congress.

To the Editor of THE MEDICAL NEWS,

SIR: For two years preparations were being made by the medical fraternity of this island for the Medical Congress which was held in Havana from the 15th to the 22d of last January. Never before have the physicians of the different cities and towns of Cuba had the opportunity of meeting to discuss medical matters, for Havana is the only place on the island where medical societies exist. Here there are two, the Academy of Medical, Physical, and Natural Sciences and the Society for Clinical Studies. At one time there was a strong probability that the plan of organizing the Medical Congress would be abandoned, for it was feared that papers of real scientific value would be scarce; but at the eleventh hour good counsel prevailed, and the Congress was held. A general invitation to all physicians who wished to honor the Congress with original papers was published in the Cuban medical journals, and to this happy thought it is due that Professor Guyon and Drs. Albarran and

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Lluria, of Paris, and Dr. Augustin M. Fernandez, of New York, sent valuable contributions.

It is said that the number of papers sent to the Secretary of the Committee of Organization was nearly one hundred, and that fifty-four of these were actually read before the Congress. The total number of members present was one hundred and ninety-four, among them a woman physician, Dr. Laura Carvajal de Lopez, the first female graduate of the University of Havana. Dr. Fernandez, who came as a delegate from the Medico-Legal Society of New York, was the only representative from abroad.

Of the scientific value of the papers read I will say nothing until the volume in which they will appear is published; however, some novel topics were discussed, such as "congenital tetanus in infants," and the treatment of the chronic diarrhœa peculiar to hot climates by what the author of the paper calls "intestinal dyalization." This "dyalization" is carried out by him in the following manner: First, he administers early in the evening one or two grammes of ipecacuanha, with the view of promoting emesis, and repeats the dose each time the patient complains of pain in the stomach; in the morning he gives from one to two grammes of calomel, repeating the dose on the second, and sometimes on the third, day. Three or four hours after the administration of these heroic doses of calomel, he gives from fifteen to thirty grammes of sodium sulphate, which he repeats if after two or three hours "the patient has not had free passages." This treatment he keeps up for several weeks! The author claims that this method of treating chronic malarial diarrhœa gives a greatly reduced mortality.

There are no epidemic diseases here at present, other than the amount of typhus and typhoid fever, croup, and diphtheria usual at this season of the year. On account of the mildness of the past winter we have had a number of cases of yellow fever. In the Hospital Mercedes there were in January four cases, in February five, and in March one, making a total of ten cases, with four deaths. In the Military Hospital there have been so far this year twenty-five cases and seven deaths. In the small private hospitals, of which there are five in this city, twelve cases have been treated during the three months, with a mortality of four.

Concerning the management of this disease, which is too old an acquaintance here to be dreaded as it is in the United States, the Cuban physicians generally pursue a symptomatic treatment, beginning with a purgative, and without particular preference for any special drug. Good nursing is considered essential. One of the papers read before the Congress was on the recent mortality statistics of yellow fever, in which the author severely criticised the results obtained by Dr. George M. Sternberg with his bichloride of mercury treatment.

A matter that is going to produce some commotion here in the summer is the enforcing of the recent regulations of the Marine Hospital Service in regard to the introduction of lepers in the United States. The sanitary inspector of this port, good old Dr. Burgess, is to have, in my opinion, his hands full of business with the protests and clamor from the rejected would-be tourists.

Havana is well provided with physicians, for, according to the *City Directory*, there are 307, which number, divided among its 200,000 inhabitants, gives a ratio of 1 for every 650. This is without counting the many army and navy medical officers residing in the city.

In my next letter I shall speak of the hospitals and other medical institutions of Havana.

BALTIMORE.

To the Editor of THE MEDICAL NEWS,

SIR: The annual meeting of the Medical and Chirurgical Faculty of Maryland has just closed. It was held in the hall of the Faculty, which contains a library of more than six thousand volumes. The sessions occupied the mid-day hours of four days, the evening of Thursday being devoted to a banquet in honor of the county delegates. About 125 new members were received—a notable event in the history of the Society. The Faculty was chartered nearly a century ago, and was given the right to examine persons who wished to practise in Maryland, and to confer upon suitable applicants licences to practise. This chartered right would, if strictly and generally enforced, have given a very high standing to the profession in Maryland, and would have saved the State from the curse of quackery and the slow and laborious task of restoring medicine to its former prestige. Unfortunately, laws have been passed by the Legislature giving to anyone who so desires, whether trained in medicine or not, the right to practise and to collect fees, and the Faculty, in consequence of dissensions among its members and want of public spirit, has never had the courage to oppose such enactments, which are probably unconstitutional. Recently a bill for a Medical Licence Board, endorsed by all schools, as it gave representation to those who profess to practise homœopathy and was very lax in its requirements, was passed by both houses of the Legislature. The Governor, however, vetoed it.

The Medical and Chirurgical Faculty has now entered upon a new phase of existence, and is aiming to become the State Medical Society, with a membership of more than one thousand. It is hoped that this change will result not only in a new impetus to medical work of the higher sort, and to the formation of branch societies in the counties, but also in the development of public spirit and union of effort among physicians which shall lead finally to the establishment of much-needed medical licence laws. The holding of a semi-annual meeting of the Faculty in Hagerstown during the past summer excited great interest among the practitioners of Western Maryland and led to the formation of a county Society there. This year a similar meeting will be held on the Eastern Shore of Maryland. Dr. Ashby, formerly the editor and proprietor of the *Maryland Medical Journal*, is the leading spirit of these new ventures.

Another matter of general interest is the entrance of Dr. Rohé upon his duties as Commissioner of Health in Baltimore. He exhibits a strong desire to promote the sanitary welfare of the city and to perfect the statistics of the Board of Health, the previous inaccuracy of which is indicated by such facts as the reported excess of deaths over births. Unfortunately, Dr. Rohé has no control over his subordinates in the office, and no power to choose or to dismiss them. The sanitary inspectors are ex-saloon keepers, etc., who happen to be upon the rolls

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of the political parties and out of work. There is a strong feeling among physicians against inspection of their patients' homes or persons by such men, especially as the physician is required to call them in. Mumps, whooping-cough, and diphtheria are upon the list of diseases to be reported. Individual physicians of intelligence and influence declare that as the law has been a dead letter for many years, and as they believe it to be unjust and unconstitutional, they will not notify the Health Commissioner unless they choose to do so. Under these circumstances we need not expect much improvement in our statistics of contagious diseases. It seems only fair that notification of births, nuisances, and contagious diseases should be required of the family of the patient, not of the physician. The day seems far distant when competent physicians will act as inspectors for the Health Board in Baltimore, the only condition upon which accurate notification is likely to be secured.

Important changes are taking place in the Medical School of the University of Maryland. Dr. Miltenberger has resigned the Chair of Obstetrics and Dr. Michael has taken his place, leaving the Chair of Anatomy vacant. Extensive improvements in the Hospital are proposed.

It is reported on good authority that certain women of wealth in this city will presently offer to the Trustees of the Johns Hopkins University the sum of $100,000 for the equipment of the Medical School (the establishment of which has been postponed for want of funds) on condition that female medical students shall be admitted on the same footing as male students—the co-education of the sexes being aimed at. The co-education of students in the scientific and literary courses of the University has, so far, been discouraged, if not forbidden, by the Trustees. Some wonder is expressed that these ladies do not devote their means, instead, to the endowment of the Woman's Medical College, already established here, which has a good corps of professors and maintains a very high standard of graduation.

CARBOLIC ACID GANGRENE.

To the Editor of THE MEDICAL NEWS,

SIR: I wish to add the reports of two cases of gangrene following the external use of carbolic acid to those published by Dr. Warfield in THE MEDICAL NEWS of April 12th. The notes of these two cases were published by me in the *Canada Lancet*, March, 1877, eleven years before the first of those noted by Dr. Warfield, and are as follows:

CASE I.—"About six years ago (in 1871) a gentleman brought his daughter, aged nine years, to consult me about an injury which she had sustained in one of her fingers. Whilst playing with a straw-cutter, with other children, the finger had passed between two cog-wheels, bruising the soft parts and bone down to the first joint. The medical man who was called in to dress the wound applied to it some strong carbolic acid and wrapped up the injured part in a rag. On removing the dressing in a day or two the whole finger was completely blackened and withered, in fact dead. Annoyed at such an unlooked-for result, the child was brought to me, and under the rhigolene spray the finger was removed."

CASE II.—"A lady who undertook to decapitate a chicken, unfortunately missed her aim and very nearly severed the end of her left middle finger. The doctor in attendance directed carbolic acid lotion to be applied. A quantity of the acid poured into a half-teacupful of water formed the wash, saturated with which a rag was bound around the injured finger. The next day, on removing this dressing, the parts which it had enveloped presented a bleached appearance; they were also numb and painless. This was very soon followed by a blackening of the skin and a shrivelling of the whole finger. When I saw the finger five weeks afterward, the line of demarcation was complete, nature's process of amputation slowly going on near the base of the finger. I accordingly anticipated this process by the knife and forceps, and removed the mortified portion."

J. D. KELLOCK, M.D.

PERTH, ONTARIO.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of April 12, Dr. R. B. Warfield, of Baltimore, says that the literature of carbolic acid gangrene dates only from the end of December, 1888.

If he is interested in this matter, I am quite sure he can find a considerable number of reported cases scattered through the medical journals of the last ten years. In addition to several referred to in the Index Catalogue of the Surgeon-General's Library, he will find one reported by Dr. J. B. Garrison, of Garretson's Landing, Arkansas, in the *Western Medical Reporter*, 1882; another by Dr. J. W. Hamilton, of Columbus, Ohio, in the *Ohio Medical Recorder*, 1880; and another by Professor T. G. Thomas, in the *New York Medical Journal*, 1880.

J. F. BALDWIN, M.D.

COLUMBUS, OHIO.

DEATH FROM ELECTRICITY.

To the Editor of THE MEDICAL NEWS,

SIR: It seems to me unfortunate that we should appeal to foreign learned societies for the *opinion* that currents from commercial dynamos, when passed through human or other living bodies in sufficient strength, produce death through disintegration of tissue. No opinion could be less substantially justified. No one has yet recorded the strength of current that has killed a man, or the order in which the vital organs have given out. Whatever opinion is at present held upon this last question must, therefore, rest upon inferences drawn from experiments upon lower animals.

The state of the case in regard to dogs is as follows, when either continuous or rapidly alternating currents are passed between the head and thigh; and anyone who will take the trouble to perform about a dozen experiments, of simple detail, can readily substantiate the results:

1st. It is easy so to adjust the current-strength that, by an application lasting only a small fraction of a second, the heart shall be arrested, infallibly and past resuscitation, while respiration is not at once stopped—may, indeed, maintain its rhythm and force for several minutes—and while the functions of all the muscles except the heart; of the nerves and their distal endings; and of the blood in the heart and great veins, all remain apparently normal.

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2d. It is not possible to discover a strength of current, or mode of applying it, through a dog's body as described, that will either arrest respiration or cause any lesion in muscles, nerves, or blood without the simultaneous, or still earlier arrest of the heart.

It is not meant by this to deny that electrical currents may be passed in sufficient strength through animal tissues to produce any lesions which could be produced by heat, or perhaps some that could not; it is meant simply to show that one of the vital organs is so fatally susceptible to electrical currents, that somatic death from such currents is practically always initiated directly in it.

Yours, very truly,

EDWARD TATUM, M.D.

YONKERS, N. Y.

NEWS ITEMS.

Competitive Hospital Appointments in Philadelphia.—The examinations for hospital positions in this city have all been held within the last two weeks. The Mayor, on the pretext of doubting the fairness of examinations at Blockley Hospital, within the past two years, had the examining board reconstructed so that there should be some one present, as he said, to watch the examinations. Several medical schools of the city joined in the cry of favoritism, which resulted in a number of very competent members of the visiting staff being displaced. Heretofore the graduates of the University of Pennsylvania have held a majority of positions as resident physicians at this hospital.

The result of the examinations held in the past week has been the continuation of this majority, and the fact that the examining board was made up of such conscientious men as Drs. R. G. Curtin, William F. Waugh, and Henry Chapman, representing, as they did, three of the principal schools of the city, is sufficient evidence that for once, at least, all competitors were put on an equal footing.

The result of the examination at Blockley Hospital for resident physicians was as follows: Women's Medical College of Pennsylvania, 3; Medico-Chirurgical College, 3; University of Pennsylvania, 13; and Jefferson Medical College, 1. The results of the other competitive examinations are as follows: Presbyterian Hospital, University of Pennsylvania 4; St. Agnes's Hospital, University 4; Howard Hospital, University 1, Jefferson 1; German Hospital, University 2, Jefferson 1; St. Mary's Hospital, University 3; Camden Hospital, University 2; St. Luke's Hospital, Bethlehem, Pa., University 2.

Lectures on Abdominal Surgery at the Chicago Polyclinic.—The recent special course in abdominal and pelvic surgery, by Drs. Senn, Fenger, Parkes, and Belfield, at this institution, seems to have met with general commendation among the physicians—one hundred and twenty-seven in number—who attended. At a meeting of the class held at the completion of the course, the following resolutions, presented by Dr. E. P. Cook, of Mendota, Ex-President of the Illinois State Medical Society, were unanimously adopted:

"WHEREAS, We desire to give expression to our appreciation of the successful and satisfactory manner in which the course has been conducted to its conclusion; be it, therefore,

"*Resolved*, That we would hereby convey to the Faculty and officers of the Chicago Polyclinic our thanks and appreciation of the discernment and skill that have conceived and executed a course demonstrative of the recent marked advances in the surgical treatment of abdominal and pelvic injuries and diseases.

"*Resolved, further*, That we are under special obligations to the several distinguished surgeons who, by their lectures and demonstrations have made this, as we believe, the best course in advanced surgery ever delivered in this country.

"*Resolved, finally*, That it is our deliberate conviction, that we have here in Chicago and in the West every requisite in skill and knowledge among teachers, and in abundance of clinical material, to qualify thoroughly all who would engage in the profession of medicine and surgery."

The course will be repeated by the same lecturers, on a more elaborate and complete plan, next winter

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 29 TO MAY 5, 1890.

By direction of the Secretary of War, leave of absence for twenty-one days is granted RICHARD S. VICKERY, *Major and Surgeon*—Par 17, *S. O. 103, A. G. O.*, May 2, 1890.

By direction of the Secretary of War, NATHAN S. JARVIS, *First Lieutenant and Assistant Surgeon*, is relieved from duty at Camp Wade, Kingfisher, Indian Territory, to take effect on the expiration of his present leave of absence, and will report in person to the commanding officer Fort Verde, Arizona Territory, for duty at that station.—Par. 12, *S. O. 102, A. G. O.*, May 1, 1890.

By direction of the Secretary of War, leave of absence for one month and fifteen days is granted JAMES C. MCKEE, *Lieutenant-Colonel and Surgeon*.—Par. 4, *S. O. 98, A. G. O.*, April 26, 1890.

By direction of the President, JOHN DE B. W. GARDINER, *Captain and Assistant Surgeon*, will report in person to Brigadier-General Wesley Merritt, President of the Retiring Board at Fort Leavenworth, Kansas, for examination by the Board.—Par. 4, *S. O. 99, A. G. O., War Department, Washington, D. C.*, April 26, 1890.

By direction of the Secretary of War, the ordinary leave of absence granted LOUIS A. LA GARDE, *Captain and Assistant Surgeon*, in Order No. 70, current series, Fort Assiniboine, Montana, is changed to a sick-leave; and the extension of said leave on surgeon's certificate of disability, granted him in Special Order No. 43, April 14, 1890. Department of Dakota, is further extended one month, on surgeon's certificate of disability.—Par. 5, *S. O. 97, A. G. O.*, April 25, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING MAY 3, 1890.

WOOLVERTON, T., *Medical Inspector*.—Detached from Navy Yard, Washington, D. C., and wait orders.

BEARDSLEY G. S., *Medical Inspector*.—Ordered to the Navy Yard, Washington, D. C.

HARVEY, H. P., *Surgeon*.—Detached from the "Ranger," proceed home, and wait orders.

HEFFENGER, A. C., *Passed Assistant Surgeon*.—Ordered to the "Ranger."

GAINES, J. H., *Surgeon*.—Detached from Hospital, Hot Springs, Arkansas, and granted sick-leave.

SPRATLING, L. W., *Assistant Surgeon*.—Ordered to Hospital, Hot Springs, Arkansas.

BOGERT, E. S., JR., *Assistant Surgeon*.—Ordered to the "Vermont."

OLCOTT, F. W., *Assistant Surgeon*.—Ordered for examination preliminary to promotion.

AUZAL, E. W., *Passed Assistant Surgeon*.—Detached from the "Yantic," and resume duty on board the "Galena."

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVI. SATURDAY, MAY 17, 1890. NO. 20.

ORIGINAL LECTURES.

TWO SUCCESSIVE CASES OF LAPAROTOMY, FOR OVARIAN CYST AND FOR OVARIAN INSANITY.

A Clinical Lecture
delivered at the Hospital of the University of Pennsylvania.

BY WILLIAM GOODELL, M.D.,
PROFESSOR OF CLINICAL GYNECOLOGY.

DOUBLE OVARIOTOMY.

GENTLEMEN: You will kindly excuse me from talking as much as usual this morning, because I have two laparotomies to perform within my hour, and I must get through with them so as not to intrude upon my colleague's time.

To begin then: The patient, now etherized before you on the table, is twenty-seven years old. She menstruates regularly, is married, but has no children. Last year she discovered that she had a tumor. Upon examination I found a cystic growth. By the sound I learned that it had no close relation with the womb, and that it began on the right side. Hence, it ought to be a cyst of the right ovary. Before beginning the operation I shall have the pubic hair removed, because it might become the nidus for septic matter. Formerly I had the pubes shaved on the day before the operation, but the effect upon my patients was too much like that of the "toilette of the guillotine," and I had to give it up until they were anæsthetized. This tumor was discovered not quite one year ago, and by operating early I shall be less likely to find adhesions than if I waited until it had grown larger. So far this session you have seen little but laparotomies in this amphitheatre; but, bear with me for a while, and you will be repaid by other operations of a more practical character, such as a physician ordinarily meets with.

The first thing I do in this case is to pinch up the abdominal wall in order to estimate its thickness. Next, I make a bold incision straight down through the fascia to the præ-peritoneal fat. This is cut and teased apart until the peritoneum is exposed. All bleeding points are now secured by catch-forceps. The peritoneum is picked up and nicked open, and a finger introduced. Thus far it is easier work than that of a simple oöphorectomy, because here I have a tumor between my knife and the bowels, and I am, therefore, not afraid of wounding the latter. You can now see the tumor exposed between the lips of the wound. It is of a pearly hue, which is pathognomonic of ovarian cysts. The next thing to be done is to empty it. This I do by puncturing it at the upper end of the wound, so that the trocar may have room to travel down with the collapsing cyst, and not slip out as it otherwise would. The fluid is chocolate-colored, and it sparkles with minute crystals of cholesterine. There are several daughter-cysts inside of the mother-cyst, and these I puncture separately, each one yielding a differently colored fluid. In the last one it is quite clear and limpid, much like that of a par-ovarian cyst. There are but few adhesions, and these I break off, or rather wipe off, from the abdominal wall by means of a sponge. A few bleeding points I catch with the hæmostatic forceps. The pedicle is very broad, and so short that the lower end of the mother-cyst dips down into uterine tissue. This portion I carefully peel out, and then catch the short pedicle by two large forceps. I shall tie this broad pedicle by the Staffordshire knot, but I do not trust to a single transfixion, which would not securely strangle so much tissue. I, therefore, transfix the stalk three times with the aneurism-needle. The transfixion must be done an odd number of times, once, thrice, or five times, else the Staffordshire knot cannot be made. The knot I am now tying is half cobbler's and half Staffordshire. After tying this knot I take the additional precaution of threading two needles with the free ends of the ligature, and of passing them through each extreme edge of the pedicle so as to prevent slipping, and then tying one more loop very tightly. I now examine the other ovary and find that it too is diseased—so badly diseased that in a few months it would also have become a large cyst, demanding removal. Its pedicle I transfix but once, because it is slender and long. This ovary I shall put on a plate and hand round to you to examine. Observe how hypertrophied it is, and note also the cyst at one end of it as large as a walnut. The ovarian stroma shows cystic and interstitial degeneration to a marked degree. My son has placed several sponges inside of the abdomen to protect the viscera from the atmosphere, and to guard them from any blood that may drop in from the wound. The sutures are now inserted, and I take the sponges out of the cavity through the incision, which grows shorter and shorter as the elastic abdominal wall, distended by the tumor, contracts. These sponges are so clean that I know that no oozing is going on. I now count them, as well as my instruments, for sponges and forceps have repeatedly been left behind by not observing this rule. Finding the number is correct I proceed to tie the sutures. The dressing consists of: 1. Powdered iodoform, which is sprinkled over the incision, especially about the navel. 2. Iodoform gauze. 3. Bichloride cotton. 4. Baked cotton, secured by adhesive straps and a stout flannel bandage around the whole abdomen, which bandage is in this case only provisional.

OOPHORECTOMY FOR OVARIAN INSANITY.

The next patient is thirty-five years old. She has been married nineteen years, and is sterile. Three years ago she began to have pains in both groins, especially on the right side. This condition went on from bad to worse until she was too crippled to do housework. Early in this year she came to me to have her ovaries removed. I did not then consider the case bad enough for a radi-

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cal operation. So she was kept in the hospital for some time, had a retroverted womb replaced by a pessary, and she improved under general treatment. After leaving us she became worse again, and at my recommendation went to the Orthopædic Hospital, where she staid seven weeks under the treatment of massage and electricity. While there she gained flesh, and when discharged was feeling very much better. This improvement, however, lasted but a short time. She rapidly grew worse, and two weeks ago she wrote me a most disheartening letter, and soon afterward came here for further treatment. She is fat, and I have never been able to outline her ovaries to my satisfaction. Yet, after repeated unfruitful examinations, I have come to the conclusion, from her history, that she is suffering from much more than a mere neurosis. For after a close cross-questioning I find, from the symptoms detailed, that she must have had a peritonitis. If so, the ovaries are probably fixed by adhesions, and so flattened and so high up on the pelvic wall that I have not been able to reach them. Sometimes the ovaries are so thinned out, spread out, and, as it were, plastered on the pelvic wall, that they elude the examining finger.

With these facts before me, I have yielded to her solicitations, and I shall now proceed to at least an exploratory incision. Since no tumor lies between the bowels and the abdominal walls I cannot cut down so boldly to the peritoneum as I did in the former case. When I come to the præ-peritoneal fat I tease it open, and pinch up the underlying serous membrane with two catch-forceps. This is raised up away from the bowels and nicked open with the knife. Bleeding vessels are now caught by forceps, and I insert two fingers into the abdominal cavity.

Finding the womb, I search for the right ovary by running my fingers along the fold of the broad ligament. It is found with some difficulty, flattened against the pelvic wall, high up, and adherent to it. These adhesions are with difficulty severed, but now the ovary and tube are released, tied, and cut off. The pavilion of the tube has disappeared, and it and the ovary present one coherent mass. The left ovary is not so closely adherent to the pelvic wall, but several fiddle-string bands of adhesions need to be broken before it can be removed. The tube is here free, but I wish you to notice how completely absent through destructive inflammation the fimbriated extremity is, and how dense and hard the tube itself is from interstitial salpingitis. Note also the long bands of adhesions which hang from the ovary, and the flocculent fringe of adhesions which floats in the water in which it is placed. It looks almost like the shaggy coat of the chorion, and it represents the points of close attachment to the pelvic wall.

Why did she suffer so much from groin pains? Because the adhesions caused a blood stagnation in the ovaries, and because these organs were dragged upon at every movement of the womb. Again the tubes are blocked at either end and their natural mucous discharges, or the unnatural discharges from the salpingitis present, could not readily escape. Hence, they were subjected to a painful distention.

This woman has evidently had pelvic peritonitis, starting as an endometritis and travelling onward as a salpingitis, as an ovaritis, and, finally, as a peri-uterine inflammation embracing the pelvic peritoneum. The cause of this peritonitis I have not been able to discover, for she was unable to throw any light on it, but I think it is specific.

Besides the constant ovarian pain from which she suffered, there exists another strong reason in favor of this radical operation: she has lately exhibited symptoms of mental aberration at the time of her monthly periods. This alone would have prompted me to the removal of her ovaries, for, of all diseases, insanity is the worst, and is to be averted by all possible means. Insanity, when limited to the time of the monthly periods, shows an ovarian origin, and the removal of the ovaries will then very generally cure the mental disease. This has been my uniform experience. But, on the other hand, if the insanity is constant though exacerbated at the monthly periods, the removal of the ovaries does very little good. It may mitigate the monthly outbursts, but it will not restore the reason. These facts have led me to the conclusion that oöphorectomy for ovarian insanity must be performed early—that is to say, while the insane impulse is periodic and not a constant factor. Another important fact that I have learned by experience is, that the removal of the ovaries cannot be depended upon for the immediate cure of nymphomania or of other erotic forms of insanity. In one of my cases excessive masturbation was not only kept up after the operation, but it was actually enhanced by it for at least a year, when the habit was finally overcome. In another case the erotic impulses lasted for over a year; but they ultimately ceased with the complete loss of the sexual feelings. I could tell you more of my experience in this interesting subject, but, as my hour is up, I shall wheel my patient into an adjoining room and there complete the dressing of the wound.

ORIGINAL ARTICLES.

A REPORT OF TWENTY-ONE CASES OF SUPRAPUBIC CYSTOTOMY, WITH REMARKS.[1]

BY HUNTER McGUIRE, M.D.,
OF RICHMOND, VA.

DURING the last two and a half years I have performed, for different purposes, suprapubic cystotomy in the male twenty times, and in the female once. The patients varied in age from six to seventy-six years. One of the cases died: in this instance a pyelo-nephritis, from long-continued obstruction to the flow of urine, was overlooked, or rather was suspected, but in the great urgency of other symptoms was disregarded. He died eight days after operation, of disease of both kidneys. This patient had been a hard drinker for many years, but for two years before his death had entirely abstained from liquor.

Another case, a child aged six years had suffered for many months from frequent and painful micturition. No cause could be found for the almost con-

[1] Read before the meeting of the American Surgical Association, Washington, May 14, 1890.

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stant and frightful pain which the child suffered. He had no cystitis, no stricture or phimosis; his urine was normal; the general health good. His father, an excellent physician, considered the disease purely neurotic. While on a visit to the city in which the child lived, his father asked me to open the bladder above the pubes to secure drainage in that way. As everything else seemed to have been tried, I consented, and operated. For three days the pain was relieved. At the end of this period the child was seized with high fever and convulsions, and the next day scarlet fever made its appearance, and ran the usual course. The tube was removed from the opening, the lips of the wound became swollen, drainage ceased, and the wound was allowed to close. The boy still suffers as he did before the operation.

Five of the operations were done for stone in the bladder. This reduces the number of cases to which I wish very briefly to direct attention, to thirteen males and one female. In five of the thirteen cases chronic cystitis existed. This disease had resisted in all of the cases for months, and in most of them for years, every form of general and local treatment. One of the first cases in which I attempted suprapubic drainage in chronic cystitis, was that of a man, who, having exhausted all remedial means without help, was operated upon by a distinguished surgeon of Philadelphia. The bladder was opened through the perineum, and a large drainage-tube inserted and kept in for three months. He got no relief from this treatment. Some months later he fell into my hands, still suffering fearfully with his bladder, and along with this a constantly leaking perineal fistula, the result of the last operation. I opened his bladder above the pubes, found a small tumor, which was believed to be a papilloma, in the upper, and back part of the organ. The growth was removed; partly with the curette, but chiefly with my finger-nail. This man has improved, but has not recovered. He keeps the suprapubic fistula open, and through it washes his bladder and passes his urine. The improvement is slow, but continuous, and his life is now comparatively comfortable. Another case was that of a man aged about thirty-five years. He had stricture of the urethra, and six or eight fistulous openings in his perineum, and scrotum. His perineum was a mass of inflammatory indurations, his urine was alkaline and stinking, with mucus, pus, and some blood. After opening the bladder above the pubes, I had very little trouble in passing a sound, first into the bladder through the wound, and then into the urethra, and out at the end of the penis, breaking up the stricture in this way. After drainage for six weeks through the suprapubic wound, it was allowed to close; at the end of two months all the fistulous openings were closed, and the greater part of the indurations of scrotum and perineum had disappeared. A third case is that of a young man with cystitis of four years' standing, following, it was believed, an attack of gonorrhœa. Drainage through a suprapubic opening was kept up for two months with complete recovery.

A fourth case was one of cystitis of two years' duration, which had not yielded to the treatment of five or six surgeons, myself among the number. In seven weeks the man was well, and the suprapubic wound was allowed to close.

A fifth case was that of a physician who had been treated for eight years by different surgeons for chronic cystitis. Six years ago he was attended by me for several months without receiving any permanent benefit. He came to me again, February 10th, suffering terribly and taking two or three grains of morphine every day. I made a suprapubic opening to drain the bladder, and for eight weeks did not permit him to pass the urine through the natural passage. The pain has ceased, the morphine has been abandoned, the urine is nearly natural, and the man is now walking about. He still keeps the fistula open, being afraid of a return of his old symptoms, and cannot yet be regarded as well.

The remaining eight cases of suprapubic cystotomy were done to relieve obstruction from enlarged prostate. None of these cases could be relieved by the simple use of the catheter and irrigation of the bladder. All of them were great sufferers; most of them had reached the period when the introduction of the catheter was very difficult, and would soon be impossible. In several cases the inflammation had extended to the ureters and pelves of the kidneys. In both sexes and at all ages mechanical obstruction to the passage of urine ends in cystitis, ureteritis, pyelitis, and, lastly, pyelo-nephrosis. Two of these cases had, along with the enlarged prostate, stone in the bladder—the existence of which I did not suspect, although I had sounded both for stone. These calculi were found after opening the bladder, in a *cul-de-sac* behind the prostate—in a position in which it would have been impossible to discover them by sounding through the urethra. In two of the cases I found stones before operating. All of these cases are now living and passing urine through the artificial passages.

The first time that I operated above the pubes for stone, I was struck by the fact that the bladder contracted and drove out through the wound every drop of fluid that the organ contained. Afterward it contracted upon my finger and slightly resisted attempts at digital exploration of its cavity. This fact renders the drainage-tube after suprapubic cystotomy unnecessary, except for the first three or four hours to permit the fresh wound to glaze, or, afterward, for

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the sake of cleanliness. In none of my cases have I ever had any urinary infiltration. I permit the patient to lie on his back or side, and to change his position whenever he desires to do so. In order to keep the patient clean I generally use a large gum catheter, one end of which is introduced into the bladder through the wound, and the other end lies in a basin placed by his side. The bladder forces the urine through this tube without difficulty, even if it is raised some distance above the level of the surface of the belly. As the wound grows smaller, say to the size of a No. 8 or 10 catheter, and the patient attempts to empty his bladder through this suprapubic fistula, or artificial urethra, a stream is sent out three or four feet from the body, the last part of it coming in jets, as from the natural urethra. If we regard the bladder as a simple bag or receptacle for the urine, it is difficult to comprehend this; but if we look upon it as a distinct organ, with a physiology of its own, and study the mechanism of urination, we can understand it. In cases of complete obstruction from prostatic enlargement, I have kept this suprapubic artificial urethra open for months, in one case for two years. After the fistula is reduced to the size of the natural urethra there is no leaking or dribbling of water, unless the bladder gets too full, and the man retains and expels it at will. The recti muscles keep the walls of the new urethra closed when not in use, and aid in preventing leakage. Indeed, so valuable is the aid of these muscles for the purpose mentioned, that in the next case that I have where an artificial anus is necessary, I will make it, if possible, low down in the middle line, between the recti muscles. This will give an imperfect substitute for a sphincter, but will be better, I am sure, than a simple patulous opening that is constantly discharging.

From my observation of drainage in the cases of suprapubic cystotomy in the male, I find it more complete than in drainage after sections through the perineum. In theory, it may not seem so, but in practice I have found it to be the case.

The other advantages of suprapubic cystotomy for drainage are apparent. The operation is simpler and far less dangerous to life than any cut into the bladder through the perineum. You go through parts less richly endowed with nerves, bloodvessels, etc.; if a fistula is left, and it is above the pubes, it is not constantly leaking or as difficult to manage as a perineal urinary fistula, and there is no danger in suprapubic cystotomy of urinary incontinence, which is often seen after perineal sections, and no danger of impotence, as I have once seen after the latter operation. In drainage through the perineum the man remains on his back in bed, and a tube is kept constantly in the bladder. In the suprapubic method the man can often sit up in a week, or sooner, perhaps, and do without the tube for several hours at a time.

The last case is that in which I performed suprapubic cystotomy in a female. The case was kindly sent to me by Dr. Tucker, of Henderson, N. C. The lady had lost the whole of the urethra and neck of the bladder by sloughing following delayed and difficult childbirth. There was absolutely no trace of the urethra, or sphincter vesicæ left. I determined in this case to make an artificial urethra above the pubes, and to close up the opening from the bladder into the vagina. The case is still under treatment, and I have not yet been able to close the fistula completely, a pin-hole opening being still left, but it has gone far enough to show me that it will be a success, and I mention it now, partly to complete the record I am giving, and partly to induce others to try the operation in similar cases.

The following is the mode of procedure which I have adopted: The night before the operation is to be performed, a purgative should be given, and if this does not act well, the next morning an enema is employed to empty thoroughly the lower bowel. The parts about the pubes should also be shaved and well scrubbed with soap and water. Early in the morning of the day of the operation a pill of five grains of quinine should be taken, and repeated every two hours until fifteen or twenty grains of quinine have been administered, and slight cinchonism produced. After the anæsthetic has been given, and the patient placed upon the table, the parts should again be washed with green soap and hot water, a stiff brush being employed to make the cleansing thorough. The parts should then be bathed with a solution of bichloride of mercury 1 : 2000. The only instruments likely to be required are a scalpel, tenaculum, and a pair of small forceps. These should be placed in a tray containing carbolic acid and hot water, 1 : 40. The next step is to clean the bladder by washing it out with a weak solution of carbolic acid and hot water. A soft-gum catheter is introduced and the bladder washed until the fluid returns free from sediment; in this way the wound about to be made is kept from coming into contact with fœtid alkaline urine, mucus, and pus which the bladder often contains. Before removing the catheter, let all the fluid escape. An empty gum bag which holds about twelve ounces of water should now be well oiled, folded upon itself, and introduced into the rectum above the internal sphincter muscle. A skilful assistant should perform this office, saving the operator loss of time in cleansing and disinfecting his fingers after the bag has been introduced, and inject into it about twelve ounces of warm water. This should be done slowly and gently, and force avoided. The bag, when

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filled, pushes the bladder out of the pelvis and above the pubes.

If properly done this lessens the danger and difficulty of the operation. The rectal distention is of great importance; if complete, it removes all danger of encountering the peritoneum. After the operation is completed and the bag is removed the bladder drops back into the pelvis. This makes the track from the bladder to the wound in the skin pass from below upward and forward, and, when the wound is reduced in size to that of the natural urethra, the fistula or artificial urethra has the same relation to the bladder that the spout has to a coffee-pot. If no rectal bag is at hand I would use a pig's bladder, or distend the rectum with sponges; or an assistant with two fingers in the rectum could push the bladder upward and forward. The next step is to fill the bladder with a weak solution of carbolic acid and hot water; probably it will hold six or eight ounces. The use of force should be even more carefully avoided here than in filling the rectal bag. If the capacity of the viscus has been diminished by disease any attempt to enlarge it by forcible dilatation is unjustifiable. As soon as the bladder is seen or felt above the pubes the injection should cease. In some experiments made upon subjects with contracted bladders, I found, when the rectal bag was well filled, that the bladder became prominent above the pubes when only two or three ounces of fluid were used. A catheter may be employed to inject the bladder, but I prefer simply to introduce the small nozzle of a Davidson's syringe into the urethra, say one and a half inches, bend the penis slightly back toward the anterior abdominal wall, making thus a gentle curve of the urethra, and to send the water through this curve from the syringe into the bladder. As soon as any resistance is felt, or as soon as the bladder can be seen or felt like a ball above the pelvic brim, the injection should cease, even if there is little or no resistance. The penis should now be tied near its base with a piece of rubber tubing, or with a gum catheter, to prevent the escape of water, or an assistant may grasp the organ and hold it down between the patient's thighs, out of the way of the operator.

Beginning now with the knife, three inches above the upper border of the symphysis pubes, varying the length according to the amount of fat and thickness of the abdominal wall, a vertical incision should be made down to the pubic bone. This cut should pass through the skin, fat, and cellular tissue down to the linea alba. The linea alba should now be divided, the incision through this structure being from one-half to three-fourths of an inch shorter than the one through the skin, but it should be carried down to the pubic bone, and the shortening be made at the expense of the upper end of the wound. Now, with the handle of the knife separate the recti muscles until the transversalis fascia is reached. There is no necessity for dividing any portion of the attachment of the recti muscles to the pubic bone. Make the dissection vertically, and carefully keep in the median line. The transversalis fascia should now be caught with the forceps, nicked, and divided with the point of the knife; if the operator prefers, he can divide the fascia upon a grooved director. The cut through this structure should not be over two inches long, but division should be made down to the pubic bone. Again, with the handle of the knife, divide the fat and cellular tissue under the transversalis fascia lying between it and the wall of the bladder. Be careful not to disturb this loose cellular structure any further than is absolutely necessary. Careless or rough manipulation here may lead afterward to urinary infiltration. The loose connective tissue just behind the pubes should especially be left undisturbed.

In this space between the transversalis fascia and the bladder sometimes, but not always, may be seen large and engorged veins. They, of course, should be avoided if possible; but, if cut, will cease to bleed when the bladder is emptied and the rectal bag removed. When the bladder is exposed, the tenaculum is passed through its walls, the viscus pulled a little forward and opened with the scalpel. The water will be seen escaping by the side of the tenaculum and the knife. In old cases of prostatic enlargement the bladder walls are thick and tough, and cannot be stretched with the finger, as can the bladders of younger subjects upon whom the high operation for stone is made. So, after the knife has entered the bladder, and is withdrawn, cut, in the median line, an opening large enough to admit the index finger of the left hand.

Let the finger follow the knife quickly, so that it may enter the bladder and thoroughly explore it before all the water has escaped, and do not withdraw the tenaculum until the finger is fairly in the viscus. Make the opening in the wall of the bladder as low down as can be safely done. Let it be opposite the upper border of the pubes, and not higher. A soft-gum catheter should now be introduced into the bladder through the abdominal wound, and the distal end of the catheter dropped into a cup placed at the side of the patient. If the catheter gives rise to vesical tenesmus, or is the source of annoyance to the patient, it may at once be removed. Otherwise it will be better to let it remain some hours, for the sake of cleanliness and to give the wound time to glaze. The wound is now simply covered with absorbent cotton, which should be changed as often as it becomes soiled. The patient can lie in any position he prefers or change his po-

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sition as often as he desires. The drainage of the bladder is complete with or without the catheter, no matter what the position of the patient. In the suprapubic cystotomies that I have seen the loss of blood has been slight and the shock of injury has been trifling. In none of my cases have I encountered the peritoneum. After a few weeks it will be necessary to keep in the artificial urethra a silver or a hard-rubber plug, for an hour or so every day, to keep it from closing.

GASTRIC ULCER.[1]

BY ANDREW H. SMITH, M.D.,

PROFESSOR OF CLINICAL MEDICINE AND THERAPEUTICS IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL; ATTENDING PHYSICIAN AT THE PRESBYTERIAN HOSPITAL.

WHAT I have to say in opening this discussion will be much compressed, and will relate almost wholly to the clinical aspects of the disease, leaving its pathology to be discussed by others.

I propose to speak only of the simple or round ulcer, described more particularly by Cruveilhier and often designated by his name. This occurs singly, as a rule, but in some cases there are two or more ulcers. Their general characteristics are a circular form, greater diameter at the mucous surface than near the peritoneum, and sharply cut edges, which in recent cases are flat and soft, in chronic cases elevated and indurated.

The ulcers vary in size from one or two inches in diameter to an opening that will barely admit the end of an ordinary probe. They occur usually in the lesser curvature and on the posterior wall of the viscus. Their tendency is to destroy successively the various layers of the stomach and ultimately to result in perforation. This latter event, however, is anticipated in the majority of cases by adhesions to a contiguous organ, as the liver or pancreas, and the floor of the ulcer is then made up of the tissue of the organ involved. When the ulcer is situated on the anterior wall of the stomach such adhesions are not readily formed, and an opening is likely to take place into the peritoneal cavity.

The smaller ulcers more frequently result in perforation than the larger ones, the tendency of the ulcerative process in the former seeming to be to attack the successive layers of the stomach rather than to spread laterally in the superficial coats.

The process is in some cases acute and in others very gradual. Healing may take place at any stage of its progress. Often there is a succession of ulcers at varying intervals of time, and the disease may be protracted in this way for many years.

These ulcers or their cicatrices are sometimes discovered post-mortem when there is no history of any stomach affection during life. Such cases, having no clinical history, are chiefly interesting as curiosities of morbid anatomy.

Gastric ulcer occurs much more frequently in women than in men. The ratio is usually stated as two to one. My own experience would incline me to rate it higher, more nearly in the proportion of three to one. In women it is most common between the ages of eighteen and thirty and after fifty. In men its frequency is about the same in the different periods of life, with a slight preponderance in favor of old age.

The subjects of this disease are generally found among those whose nutrition is in some way faulty. Anæmic and chlorotic girls furnish the greater number. In this country it is of very common occurrence among young female servants. Probably the reason for this is to be found in the unhygienic conditions incident to their habits and mode of life.

The disease is very commonly associated with dyspepsia, and it is often difficult to determine the point at which the symptoms of the one affection merge into those of the other.

The pathology of these ulcers has been the subject of much discussion, and particularly the share which the digestive fluids have in their production. It would not be profitable to follow out the various arguments which have been presented in support of the different theories, but I think that from the facts recorded we may safely deduce the conclusion that in conditions of diminished vitality, either general or local, an abrasion of the mucous membrane, however produced, is liable to be the starting-point of an ulcer. It seems clear that while the healthy epithelium of the stomach is proof against the solvent action of the gastric juice, the underlying structures are subject to erosion when they come in contact with it, and especially if the resistance of the tissues has been impaired by previously existing malnutrition.

Clinically there are four principal ways in which gastric ulcers may behave:

1. There may be perforation without any notable preceding symptoms.

2. There may be hæmorrhage as the first symptom.

3. There may be symptoms of gastric disorder for a variable period, and then hæmorrhage or perforation may take place.

4. There may be a more or less protracted disorder of the stomach without hæmorrhage or perforation, and terminating either in recovery or in death from exhaustion or from intercurrent disease.

In a certain very small proportion of cases a person previously in fairly good, though seldom in robust health, usually while engaged in some kind of muscular effort, suddenly experiences extreme

[1] Read before the Clinical Society of the New York Post-graduate Medical School and Hospital, March 29, 1890.

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pain in the region of the stomach, immediately followed by prostration and faintness, or perhaps collapse, and in a very brief period the symptoms of general peritonitis are fully declared. The autopsy discloses a perforation of the stomach the result of a simple ulcer. The progress of the ulcer has not been marked by any symptom sufficiently decided to arrest the attention of the patient, and the appalling result takes him wholly unawares. The ulcer in these cases is usually small and its progress rapid, but as to this latter point the evidence at the autopsy is not always conclusive.

In certain other cases, under precisely similar conditions, a sudden hæmorrhage takes place followed by hæmatemesis. The loss of blood may be so great as to destroy life in a few hours or even minutes. But in the majority of cases the bleeding soon ceases, either permanently or to return after a short interval. There may be a number of these bleedings in quick succession, rapidly exhausting the patient, or the recurrences may be separated by months or years, the patient in the interval enjoying his usual health. When death occurs as the result of this kind of hæmorrhage, an ulcer is found which has opened a vessel of considerable magnitude. As the vessels ramify principally in the submucous coat an ulcer may cause hæmorrhage without endangering perforation.

Such a hæmorrhage may be recovered from, and little or no subsequent inconvenience be experienced, or it may be the beginning of a train of gastric symptoms, including perhaps other hæmorrhages.

Again, a patient may suffer for a variable time with pain, epigastric tenderness, vomiting, and other symptoms of gastric disturbance, which will be dwelt upon at greater length hereafter, and then hæmorrhage takes place or the symptoms of perforation are suddenly developed.

And lastly, the pain, vomiting, etc., referred to above may continue for an indefinite period, constituting the only symptoms of the disease, and leaving the diagnosis perhaps obscure and doubtful. The patient may be worn out at last with suffering and inanition, or may succumb to some intercurrent disease, the autopsy revealing one or more open ulcers and perhaps the cicatrices of others. Or, after a period of suffering, more or less protracted recovery takes place, and we can judge that an ulcerative process has been present only by excluding all other conditions capable of producing the symptoms observed.

Let us now examine the symptoms of gastric ulcer a little more in detail. The first, most prominent, and most constant of these is pain. It occurs in some degree in all cases excepting those in which death results from a single overwhelming hæmorrhage. It exists usually in two forms. The first, which is almost constant, or at least present for considerable periods, is of a comparatively dull, aching character, varying from a mere uneasiness to a heavy, grinding pain. It is similar to that found in chronic gastritis, and probably is due as much to the inflammation which usually accompanies the ulcer as to the ulcer itself. It exists in some degree during the intervals of digestion as well as while food is present in the stomach. At times, however, it assumes an intense neuralgic character, and radiates to the surrounding parts. It may be so severe as to induce syncope. At such times it resembles in character the pain of nervous gastralgia, but unlike this it is usually, though not always, increased by taking food. The other form of pain, and the one which is more distinctive of the disease, is produced by the contact of food with the sensitive surface of the ulcer. It begins shortly after the food is taken, and gradually subsides as the stomach becomes empty. It is much influenced by the quality of the food ingested. Food which contains coarse and irritating particles or is acid or acrid in its nature provokes a more severe reaction than that which is bland and neutral in its properties. Substances which are very hot or very cold when taken into the stomach increase the suffering. The pain is variously described as burning, piercing, grinding, etc. It is very accurately localized in a circumscribed place, usually about the xiphoid cartilage. Sometimes change of posture will give relief by removing the contents of the stomach from the sensitive point, and by this test we may be able to judge of the situation of the ulcer. Very frequently the pain "runs through to the back," as the patient expresses it, and is felt with great intensity at a point directly opposite to the spot in front. At other times it radiates through the dorsal region, or may be felt between or beneath the scapulæ. From my experience I am inclined to attach much diagnostic significance to this dorsal pain. I have very seldom found it wanting in unequivocal cases of gastric ulcer, and I do not remember to have seen it pronounced in any case of gastric disease in which ulcer could be positively excluded.

Epigastric tenderness is very generally present. It is definitely localized, and may be elicited even when pain is not present. Pressure sometimes does not cause pain immediately, but after a brief interval, and the pain so induced may become a severe paroxysm. I have known the examination by the physician, when somewhat energetically carried out, to result in intense and protracted suffering to the patient. Pressure on the epigastrium is often felt more acutely in the back than at the point where it is exercised. As shown by Hilton, the pain is sometimes felt at distant points in the track of communicating nerves.

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Next to pain, the most prominent symptom is vomiting. It does not occur in every case, but its entire absence is rare. It does not differ essentially, however, from the vomiting of dyspepsia, unless the vomited material contain blood in considerable quantity. Slight hæmorrhage may occur with the vomiting of chronic gastritis, but it rarely amounts to more than streaks of blood in the vomited matters. The vomiting in ulcer is excited for the most part by the presence of food in the stomach, and seems to be provoked by the pain which the food excites. To this pain it brings at least partial relief. It is of no positive diagnostic value, except when it takes the form of hæmatemesis. The blood is then pure, and if thrown off soon after it is extravasated it is fluid and bright red. If retained in the stomach for a time it comes up more or less clotted and changed to a dark color by the action of the gastric fluids. The quantity may be only a single mouthful or it may amount to pints or quarts. If a large vessel is opened the hæmorrhage may be promptly fatal. The vomiting contributes to this result by interfering with hæmostasis at the bleeding-point. More commonly the loss of blood, assisted, no doubt, by the mental shock, soon reduces the heart's action to a point which permits a coagulum to form in the divided vessel, and the bleeding is arrested, at least for a time. But when the force of the circulation is restored, and particularly if vomiting should again be excited, the coagulum, softened meanwhile by the action of the gastric juice, is likely to be displaced and the hæmorrhage to be renewed. In this way it is common to see a succession of hæmorrhages during several days, which may then prove fatal or may be permanently arrested.

If the blood effused into the stomach be not too great in amount there may be no hæmatemesis, the entire quantity passing off by the intestinal canal. If the peristalsis is active the evacuated blood may be but little changed. But, as a rule, it is retained for several hours in the intestinal tube, and when voided has the color and consistence of tar, having been acted upon by the intestinal secretions and blackened by the sulphurous gases with which it has come into contact.

In all cases of suspected gastric ulcer the patient or nurse should be instructed to observe the evacuations carefully, as otherwise a hæmorrhage not sufficient to cause emesis might escape detection.

Profuse hæmorrhage from the stomach is strongly suggestive of gastric ulcer, but it is by no means pathognomonic. It is often seen in cirrhosis of the liver, and it may occur in gastric cancer. On the other hand, the coffee-grounds vomit, so characteristic of the latter affection, may be occasioned by slow oozing from a gastric ulcer.

Perforation into the free cavity of the peritoneum necessarily entails general peritonitis. But the wall of the stomach may be perforated without communicating with the peritoneal cavity. Adhesion with the abdominal wall, with the liver, pancreas, spleen, or diaphragm may prevent such a result. A gastro-colic fistula may be formed, or the diaphragm may be ulcerated through and a communication established between the stomach and the pleural cavity or the pericardium, giving rise to violent inflammation of the serous membrane. Adventitious cavities are sometimes formed by adhesions between the stomach and adjacent parts, these cavities communicating with the stomach and being filled from its contents. In a case under my observation during the past winter such a cavity formed between the stomach and the diaphragm. It was large enough to hold a pint of fluid. The irritation from it was communicated to the left pleura and to the pericardium, causing inflammation of each. There was also consolidation at the base of the left lung. Two attacks of general peritonitis occurred, induced, probably, by leakage from the cavity into the peritoneal sac. The last of these attacks proved fatal.

The existence of the cavity was not diagnosed during life. Its edge only presenting toward the front, the narrow line of dulness which it occasioned was confounded with that of the liver and heart.

The remaining symptoms which accompany gastric ulcer, if not actually due to the associated gastritis, so closely resemble those of that affection that they have little or no diagnostic significance, and, as to follow them in detail would unduly prolong this paper, I will omit them.

The treatment of gastric ulcer is chiefly dietetic. Our object being to promote the healing of the ulcer or ulcers, our first care must be to remove all avoidable causes of irritation. Solid food is irritating in two ways: first, through the mechanical effect of contact with the denuded surface; and, second, through the peristaltic action which it excites in the stomach. Hence the first requisite of the food is that it be liquid or at least semi-fluid. By universal consent milk is selected as the basis of the diet. But if given in its ordinary form it is likely to produce tough, firm curds, which are as harmful as solid food. This is effectually prevented by peptonizing, and this process has the further advantage that it greatly facilitates digestion and absorption. The single drawback is, that it gives to the milk a bitter taste, which is very objectionable to most patients. This difficulty may be obviated by adding a small quantity of coffee, which entirely masks the bitter taste and is in no wise objectionable. The further addition of a little sugar makes it still more palatable. Milk thus prepared should form the exclusive diet for the first week of treatment. After this, mutton, chicken, or

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beef broth may be added. It is better that enough should be given at a time to permit a considerable portion of the gastric mucous membrane to exercise its absorbent function at once, rather than to tease the stomach with frequent small doses which must be taken up by a correspondingly small absorbing surface. But the total quantity should never be more than can be easily disposed of by the stomach. If this amount is not enough for the needs of the system it should be supplemented by nutritive enemata. Indeed, in cases of great gastric irritability it is better to depend entirely upon this method of alimentation and to give the stomach complete rest until its condition improves.

The return to solid food should be very gradual. To the milk and broth may be added, after a time, some of the prepared foods for infants, such as Nestlé's, or Carnrick's, or "Imperial Granum." Raw or soft-boiled eggs may be permitted a little later, then scraped raw beef, boiled sweetbread, boiled breast of chicken, etc. The slightest aggravation of the symptoms, meanwhile, should be the signal for a return to simpler diet.

In the way of medication it is doubtful whether anything which the stomach would retain would be active enough to modify in any degree the condition of the ulcer. I believe, however, that benefit would be derived from one-fourth to one-half grain doses of nitrate of silver, dissolved in an ounce of water and taken while the patient is lying on the right side, supposing the ulcer to be in the usual situation toward the pyloric end of the stomach. If the medicine excited nausea its action could be checked at once by a swallow of a weak solution of sodium chloride.

The Carlsbad salts are found useful to correct the gastric catarrh which is generally present. According to Welch, one or two teaspoonfuls dissolved in a half-pint or a pint of water, at the temperature of 95°, should be given in divided doses before breakfast each morning, with the object of acting upon the bowels.

The presence of acid in the stomach not only interferes with the healing process, but also adds greatly to the pain. Hence antacids are often indicated, and I know of no other so well calculated for this purpose as the precipitated hydrate of magnesia or "milk of magnesia," as it is called. This preparation, which has much the appearance of and tastes somewhat like milk, is perfectly bland and unirritating, and its neutralizing power is very great. Another advantage which it has over sodium bicarbonate is that it does not cause the evolution of carbon dioxide, and thus add to the flatulent distention of the stomach.

Milk of magnesia is prepared by precipitation from a solution of magnesium sulphate by the addition of ammonia. By repeated washings the ammonia is removed, enough water being left at the last washing to keep the flocculent hydrate in suspension.

The pain will generally become bearable under the use of a proper diet, but in some cases it may be necessary to resort to opiates. The danger of contracting the opium-habit must always be borne in mind if this drug is employed.

The vomiting, if not restrained by proper diet, is best controlled by giving bits of ice and by applying ice to the epigastrium. The occasional use of hypodermic injections of morphine for this purpose may be allowable. If these means are ineffectual, all use of the stomach should be suspended for a time and rectal alimentation resorted to.

Hæmorrhage calls for absolute rest, the administration of ice, and cold to the epigastrium. As the gastric artery runs from left to right along the lesser curvature of the stomach, decubitus on the left side gives the advantage of gravitation in the arrest of hæmorrhage, supposing the ulcer to be located toward the pylorus. This position has the further advantage of removing the contents of the stomach from the bleeding point.

The use of astringents and other direct hæmostatics is of doubtful utility. They are very apt to excite vomiting, and diffused, as they must be, over so large a surface their action upon the bleeding point can scarcely be appreciable.

Ergot is generally recommended, but I cannot consider this other than one of the too common abuses of this drug. Its action upon the vessels is confined to the arterioles, and when a vessel of larger size is opened ergot can have no other effect than to obstruct the collateral circulation and thus to increase the tension in the proximal portion of the bleeding vessel. Ergot is of great value in capillary hæmorrhage, for it then acts as a ligature to the smaller vessels. Therefore we might prescribe it (hypodermically of course) in the gastrorrhagia of cirrhosis of the liver; but it is wholly out of place in the hæmorrhage of gastric ulcer.

The rectal alimentation during and after hæmorrhage may be in the form of peptonized milk, with or without the addition of raw eggs; or strong animal broths may be preferred. Digested meat, such as the preparation of Leube or of Rudisch, is a convenient and efficient material. Carnrick's Beef Peptones have been used extensively with good results.

But according to my experience the best possible rectal food is defibrinated blood. It is very readily absorbed, the corpuscles as well as the serum being taken up. This is shown by numerous instances in which the dejections from the bowels during this treatment have been found of a normal color and

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absolutely free from all appearance of blood. That blood thus absorbed directly into the circulation requires less elaboration before assimilation by the tissues than any of the usual rectal foods, goes without saying.

It is my habit to order it in all cases of hæmatemesis, and to continue its use in smaller quantities for two or three weeks after the stomach has resumed its functions. I continue its use in order to overcome the profound anæmia usually present, and I know of no other remedy equally efficacious. About three ounces every fourth hour will be sufficient when no food is taken by the stomach. The bowel should be cleansed once a day with a large enema of tepid water.

During the early part of the treatment of gastric ulcer, whether hæmorrhage has taken place or not, the patient should not be permitted to rise from the bed, and later, when the tendency to vomiting has ceased, only the most gentle movement about the room should be allowed. Only after all the symptoms have been absent for some weeks can the patient safely resume his usual occupations.

THE MODERN TREATMENT OF VESICAL CALCULUS IN MALE CHILDREN.[1]

BY J. WILLIAM WHITE, M.D.,
PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF PENNSYLVANIA; SURGEON TO THE UNIVERSITY AND GERMAN HOSPITALS.

UNTIL comparatively recent times the very low mortality of perineal lithotomy in children in the hands of skil ul operators made it seem a work of supererogation to seek for a better method of operation. A safer could scarcely be found. A high rate of mortality after lithotomy was almost always due to deaths among elderly adults. Fergusson long ago said that it would be difficult to name any single operation of magnitude which was more successful on young subjects than lithotomy, quoting a series of 105 cases operated on at the Norwich Hospital with only three deaths, as evidence of the correctness of his statement. Brodie said, "in boys under the age of puberty lithotomy is so simple and so generally successful that we ought to hesitate before we abandon it for any other kind of operation." These opinions were reiterated by surgical teachers almost without exception, from those days until some six or seven years ago. Velpeau enumerated as the objections to lithotomy before puberty "the want of development of the sexual organs, the small diameter of the urethra, the indocility of the patients and the extreme sensibility of the parts." In 1884, Surgeon-Major Freyer, an accomplished lithotritist, and a lithotomist who had cut for stone in boys 132 times consecutively without a single death, repeated Velpeau's assertions almost in the same words, objecting to the crushing of stone in boys on account of the undeveloped condition of the genito-urinary organs, the smallness of the bladder, the narrowness of the urethra, and the liability to laceration of the vesical and urethral mucous membrane. He added that no instruments had been invented by which litholapaxy could be performed with safety in male children.[1]

Other objections have been advanced from time to time, mainly, however, relating to the same anatomical points, and (before the introduction of litholapaxy) to the difficulty of getting rid of the fragments. As late as 1888 Keyes wrote that, on account of the limited proportions of the male urethra before puberty, the excessive sensibility of the child's bladder, and the want of docility and self-control at that time of life, lithotomy is to be preferred in male children under the age of fourteen. He makes exception in favor of very small stones, and quotes in a foot-note the more recent results of litholapaxy in children.

Many similar expressions could be quoted from the writings of surgeons of all degrees of experience, but they emphasize chiefly the same points, the majority of which are now, in the light of the modern improvements in lithotrity, without applicability. Anæsthesia has made the "extreme sensibility" of the parts and the "indocility" of the patients of little moment. Otis has shown that in children, as in adults, the "small diameter of the urethra" may be greatly increased with entire safety;[2] antisepsis during and after the operation has minimized the danger of laceration of the mucous membrane; instruments have been made which are at the same time small enough to permit of their introduction into the urethra and bladder of young infants and strong enough to deal with very large and very hard calculi; Bigelow has overcome the difficulty of getting rid of the fragments; and the argument from statistics is at least neutralized by the records of Keegan and Freyer, the former having performed

[1] Read before the annual meeting of the American Surgical Association, Washington, May 14, 1890.

[1] The difficulty of obtaining suitable instruments for the crushing of stone in children is still very great. I found it quite impossible two years ago to get reliable lithotrites of the proper size. On giving an order to Weiss later (in the summer of 1889) I was told that I could not be supplied for many months, and I finally secured those I now have only through the kindness of a London friend (Mr. Frederick Treves) who brought them to me, having himself had considerable trouble in procuring them. I add this note for the information of American surgeons who may contemplate employing litholapaxy in children in the near future.

[2] He says that the proportionate relation between the circumference of the urethra and that of the penis, which he has already demonstrated in adults, holds good in children. Thus with a circumference of penis of one and a half inches, as in a child from two to three years of age, the size of the urethra would not be less than 16 millimetres in circumference; and this urethral calibre increases or diminishes about two millimetres for every quarter-inch added to or subtracted from the penile circumference.

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fifty-nine litholapaxies in children with but one death;[1] the latter, influenced by his colleague's results, having adopted the operation and performed forty-nine consecutive litholapaxies without a death.[2] In the face of these undisputed facts there is but one argument remaining which, to my mind, has any weight as urged against the operation of litholapaxy in children, and that is, the alleged greater probability of recurrence.

As regards the two great classes of operative procedures for the removal of calculus—the cutting and the crushing operations; all forms of lithotomy as compared with all forms of lithotrity, and at all ages—there can be little doubt that the statistical evidence in relation to recurrence is at present in favor of lithotomy. But it should not be accepted without reservation. Many of the tables, notably those of Sir Henry Thompson and of Mr. Cadge, are based on an experience extending over many years, and antedating the introduction of litholapaxy. Those tables make the proportion of recurrence after lithotrity about 1 in 7 or 1 in 8, and after lithotomy about 1 in 20; but, like so much of the statistical matter which our text-books and journals contain, they are useless or misleading at the present day. The two principal causes which lead to recurrence are: *a*. The failure to remove every portion of stone at the first operation; *b*. The new formation of stone in the kidney and its descent into the bladder. In the tables of Mr. Donald Day, based on the records of the Norwich Hospital, the first class includes two-thirds of all the cases of recurrence. But circumstances have altered. The employment of a large-sized evacuating tube, the immediate and thorough emptying of the bladder, the minute pulverization usually possible with completely fenestrated lithotrites, the increased knowledge of the great tolerance of the bladder to prolonged manipulations if they are gentle and skilful, have all combined to place the question of recurrence upon a very different level, and to make the collection of a new set of statistics absolutely necessary before venturing to draw any positive conclusions.

But if, for the sake of argument, we investigate existing statistics on this subject we find that the great majority of cases of relapse or recurrence have taken place in patients past middle life, and especially in very old persons with enlarged prostates and feeble or atonic bladders.[3] It will be recognized at once that these conditions do not prevail in children. The prostate is undeveloped; the bladder is almost an abdominal organ; no pouch exists at the fundus; sacculation is nearly or quite unknown; cystitis is a comparatively manageable complication; the expulsive power is proportionately greater than in the male adult, in whom a "physiological atony" is not at all infrequent. In addition to these reasons for not anticipating the formation of new calculi in children around nuclei of *vesical* origin it may be reasonably expected that the conditions favoring the development of *renal* calculi will be more easily treated and controlled in children than in adults. Certainly among well-to-do people who can carry out a proper system of diet and medication it is fair to suppose that the lithic diathesis, of whatever variety, will be more readily combated in children whose diet and drugs and mode of life can be rigidly administered, than in adults with fixed and often very prejudicial habits.

For these reasons, while admitting that the question of recurrence is still *sub judice*, I am distinctly of the opinion that there is little probability that there will be enough difference between the proportions of relapses in children after lithotomies and after litholapaxies to justify any decided preference on that ground alone.

The position of litholapaxy in children is moreover strengthened by a review of the history of lithotomy which, unlike the operation with which we contrast and compare it, has undergone but little change for many years. The improvements in suprapubic lithotomy have, it is true, rendered it applicable to a much wider range of cases, and it is equally true that its most favorable results have been attained in children; but thus far the statistics of suprapubic lithotomy in children do not compare favorably with those of either litholapaxy or lateral lithotomy. This is probably due to the fact that in a large proportion of cases the operation was selected only after litholapaxy had been attempted and failed, or else was originally chosen on account of the unusual character of the calculus.[1]

It will probably always be employed in preference to lateral or median lithotomy in cases of extremely large or exceptionally hard stones, but when we remember that Freyer has removed by litholapaxy a calculus weighing 808 grains from a boy of nine, and Keegan one of 700 grains (and of uric acid) from a boy of nine and a half, it is evident

[1] Due to laceration of the bladder and urethra during the withdrawal of an unsuspected foreign body two inches in length, introduced through the rectum.

[2] Cadge places the general mortality after perineal lithotomy in children at 5 or 6 per cent.: after litholapaxy, at not more than 2 or 3 per cent. Fenwick has collected 106 cases of litholapaxy in children from one to fifteen years of age with 1 death, a mortality of 0.9 per cent.

[3] Mr. Cadge expressly states that this was true in his own cases, and adds that he has no personal experience of lithotrity in children.

[1] It is true that MacCormac has reported (The British Medical Journal, March 19, 1887) 33 cases of suprapubic lithotomy without a death, but they were from scattered sources, and did not constitute a consecutive series. There is no means of knowing how many unsuccessful, and therefore unreported, cases occurred during the same period.

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that neither size nor hardness offers an insuperable bar to the latter operation.

Median lithotomy in children, although advocated by some surgeons, is objectionable on account of the greater danger of wounding the bulb or the rectum, and the difficulty in obtaining space through which to pass the finger into the urethra and the bladder. It is indeed true that the passage of the finger is not absolutely necessary, although it has always been one of the time-honored rules of lithotomy not to withdraw the staff until the finger is in contact with the stone. I have, however, frequently seen Dr. Agnew, when operating on young children introduce a pair of very small lithotomy forceps along the groove of the staff, separate them and seize the stone, and then, after the removal of the staff, extract the calculus the finger never having been in the bladder. I have used the same manœuvre myself with success. I supposed it was original with Dr. Agnew (and believe he was of the same opinion), but I found that Mr. Cadge[1] recommended almost precisely the same method as both safe and efficient, adding, "I dare say it has been adopted by others but I do not find it alluded to in modern text-books." It must be remembered, however, that its adoption places the surgeon in almost the same situation in regard to the possibility of leaving débris or unnoticed stones in the bladder, as he occupies after a litholapaxy. If the stone is soft and breaks down under the forceps, or if there are multiple calculi, he will be dependent on the touch and sound elicited by the vesical explorer just as after the other operation. If then the introduction of the finger be dispensed with in either median or lateral lithotomy in children these operations lose one of their alleged advantages, viz., the assurance of the absolute removal of all calculous fragments. If it be insisted upon it constitutes in a small proportion of cases an unavoidable source of both difficulty and danger. Sir William Fergusson, Keith, Thompson, Cadge, and many others have recorded occasional trouble with this step of the operation. The latter surgeon remarks, *apropos* of Fergusson's case: "He was a master of the art of operative surgery; if the difficulty occurred to him we may conclude that it is not unlikely to occur to any of us."

Lateral lithotomy in children in addition to the special difficulty due to the smallness of the parts, the high position of the bladder above the pelvis, the delicacy and mobility of the deep urethra and the vesical neck, has one possible contra-indication which should not be lost sight of. If the incision be prolonged a little too far backward the left ejaculatory duct can hardly escape division and subsequent obliteration, and although this may not be a serious accident in cases in which the integrity of the opposite half of the genitalia, the testicles, duct, etc., is unimpaired, yet it leaves the patient entirely dependent on that one side for fertility if not for potency. Mr. Teevan has reported four cases of sterile husbands among lithotomized patients. Langenbeck and Sir William MacCormac have called attention to the same danger, and Keegan believes the lateral operation to be frequently followed by emasculation. Dennis quotes Dr. Charles Leale in relation to several cases, coming under his own observation, in which such patients grew up with shrill voices, atrophied testicles, absence of hair upon the face, etc.; in fact with all the characteristics of eunuchs. The evidence as to this point is as yet fragmentary and inconclusive, but is of sufficient importance to deserve careful consideration.

These objections to perineal lithotomy in children are at least as weighty as any that have been urged against litholapaxy. The ease and satisfaction to both patient and surgeon with which the latter operation may be performed, I can best illustrate by a brief abstract of one of my own cases:

C. W., a small boy, aged five and a half, was brought to me by his father in October, 1889, on account of nocturnal incontinence of urine. He had a long, tightly adherent prepuce with pin-point aperture. It "ballooned" at each act of urination. I circumcised him; gave small doses of belladonna and bromide of sodium, and dismissed him, apparently cured, in November.

In January he was brought to me again by his nurse, who told me that his symptoms had returned. I then sounded him for stone, but failed to find it. Insisting (according to my invariable rule in such cases) upon a second examination before giving a positive opinion, I easily found a calculus. I recommended crushing, and after a little delay the parents consented. On February 20th, the child being etherized, I drew off the urine and injected three ounces of warm boric acid solution (fifteen grains to the ounce) into the bladder. I then enlarged the meatus[1] and introduced a Weiss fenestrated lithotrite—No. 16 French. This went in with ease. The stone was readily seized and broken. I spent twenty-five minutes in pulverizing it, paying especial attention to gentleness of movement and to the avoidance of rude or unnecessarily wide separation of the jaws of the instrument. A No. 16 tube was then introduced and a Bigelow evacuator employed. In about eighteen minutes,[2] as no more fragments

[1] Hunterian Lectures, 1886.

[1] Otis recommends performing the meatotomy long enough before the litholapaxy to allow the parts to heal. This is certainly desirable for some reasons, but in nervous children its advantages are counterbalanced by the need for two fixed appointments, two operations, etc. I have never found any harm resulting from the plan I here followed.

[2] The pressure on the rubber bulb during the process of evacuation should be slight and frequent rather than slow and vigorous. Prof. Bigelow, himself, called my attention to the much greater value of the former method, and I have repeatedly verified the correctness of the statement. Not only is the danger of driving back into the bladder sharp fragments of stone, materially lessened,

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or dust could be perceived, the tube was withdrawn and the bladder carefully explored with a vesical sound. Nothing was discoverable.

The time of operation was forty-three minutes; weight of dried calculus, 170 grains. The child was sitting up in bed on February 22d, and was out of bed, playing about the room, on February 25th. The nocturnal incontinence persisted for a week or ten days, and then disappeared entirely. There was no fever, bleeding, chill, or other alarming symptoms.

The parents were nervous, consented reluctantly to this operation, and would certainly have postponed a lithotomy for a long time, much to the little patient's detriment.

This is a typical case of litholapaxy in a young boy. It can scarcely be wondered at that after an experience of dozens of such cases Keegan writes that he would as soon think of cutting an old man for the removal of a small stone as of performing lateral lithotomy on a boy whose urethra would readily admit the passage of a No. 8 (No. 15 French) lithotrite and whose stone was neither abnormally large nor hard. Nor is it surprising that Freyer says that lithotomy in the adult having been practically blotted out of his practice, he looks forward confidently to lithotomy in children meeting with a similar fate. Cadge, MacCormac, Jacobson, Kingston, Keyes, Hunt—indeed, most recent writers—press the conviction, though in less sweeping terms, that the field of litholapaxy in children is likely to be considerably enlarged in the near future.

For myself, basing my opinions on the facts mentioned in this paper and on my personal experience, I believe the following conclusions to be justifiable:

1. In every case of calculus in male children[1] litholapaxy, on account of ease of performance, low mortality, speedy recovery, and absence of danger of emasculation, should be the operation of predilection, division of the meatus being freely resorted to if that portion of the urethra offers an obstacle to the introduction of instruments.

2. The lithotrite and evacuating-tube should be of a size which can be inserted into the bladder without much effort or over-distention, and great gentleness should be observed in passing these instruments.

3. They should be withdrawn and reintroduced as seldom as possible, the stone being finely pulverized before the lithotrite is taken out at all. In seeking for or attempting to seize the stone, care should be taken to avoid such wide separation of the blades as will bring the male blade in frequent contact with the vesical neck. The crushing should invariably be done only after rotating the blades into the centre of the bladder. Every particle of the calculous dust should be evacuated.

4. Rest in bed, milk diet, and sterilization of the urine by boric acid or salol given internally both before and after the operation are valuable adjuvants. During the operation every antiseptic precaution should be observed.

5. The exceptional cases of calculi which are both large and hard may be best treated by suprapubic lithotomy, but neither unusual size nor a moderate degree of density should of itself alone be thought positively to contraindicate litholapaxy.

6. Perineal lithotomy has now a very limited field, and should be employed chiefly in those cases of stones thought to be of small or medium size in which no lithotrite, however small, can be introduced with safety.

but the swiftness and effectiveness of the outward current are much increased. I so often see an entirely unnecessary degree of force expended in the working of the bulb during this stage of a litholapaxy, even by expert operators, that it seems worth while to make this note.

[1] These remarks apply almost as well to adults.

THERAPEUTIC OXYGEN.

BY SAMUEL S. WALLIAN, A.M., M.D.,
OF NEW YORK.

THE recent translation of a French work on oxygen, and its publication with American notes and a summary of the experiences of American experimenters, have given fresh interest and impetus to the subject of the therapeutics of oxygen in this country. It is, however, amusing to note that in this somewhat prolix and plethoric volume, as originally published in Paris in 1866, Demarquay refers to the blatant claims of the original "oxygenized air" humbugs who "discovered" this wonderful cure-all (nitrous oxide) in Philadelphia about that time, as evidence of a revival of interest in Priestley's "dephlogisticated air," or oxygen!

There has been a similar confusion in the minds of physicians in this country. They have unthinkingly confounded the recent investigations of oxygen therapeutics with the silly claims of quacks who advertise "compound oxygen." No physician can intelligently study the subject until he has set aside all this specious rubbish. The old prejudice, which arose from the fact that in America the use of this agent, or something which passed for it, was, until quite recently, in the hands of the most arrant charlatans, and by them heralded as a panacea, has gradually given way, and at present some of the most earnest men in the profession are carefully experimenting with, while many others are making extensive clinical use of the agent.

The results of modern research in connection with the physiology of respiration are not yet to be considered as final. The compression chamber, the air-pump, the spectroscope, and more accurate methods of analyzing the circulating fluids, and of collecting and testing the gases of the blood, have

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enabled modern physiologists to see a little further and more clearly than their predecessors.

The coloring matter of the blood, hæmoglobin, was first obtained in a crystalline state by Funke, in 1853. Its function seems to be that of an oxygen-carrier, transmitting the free oxygen, absorbed or appropriated from the atmosphere, to the tissues where the vital element chiefly accomplishes its various offices. Formerly oxygen was presumed to effect most, if not all, its work in the lungs themselves, and by direct combination, or so-called combustion. This theory is now practically obsolete, and with it should have gone the very general, but equally erroneous impression, that the direct inhalation of pure or unmixed oxygen is necessarily attended with inflammatory tendencies. It is now conceded that any such results supervening upon the use of this agent are directly traceable to impurities resulting from imperfect methods of preparing the gas.

Furthermore, the study of this gas as a remedial agent will never be entirely satisfactory until a more definite distinction is made between ordinary oxygen, as it exists in the atmosphere, and therapeutic oxygen. The former may be said to be in a comparatively passive condition, while the latter should, doubtless, always be *nascent*, or in a certain degree allotropic oxygen. The difference is marked and wide, but not by any means generally recognized. Modern chemists distinguish at least three states of oxygen: passive or atmospheric oxygen, which they venture to indicate by the symbol O; nascent, or factitious oxygen, designated by O_x; and ozone, or allotropic oxygen, represented by O_3. As the latter condition is extremely unstable, and, on account of its powerful and rapid action as an oxidizer, can be retained only in glass receivers, experimentation with it is both difficult and unsatisfactory. It is only as ozonized oxygen that it can be practically or therapeutically considered. Again, Brereton Baker has shown that the combining activity of oxygen is almost or quite destroyed if the gas be thoroughly desiccated. Charcoal, heated to redness in anhydrous oxygen, showed no signs of ignition. A volume of oxygen was dried for five years in contact with phosphorous pentoxide. In this dried gas sulphur was distilled without emitting the faintest flame; whereas, in moist oxygen sulphur burns at a temperature of 320° C. Even phosphorus could be distilled in similarly dried oxygen, while in moist oxygen it ignites at about 60° C.

Most experimenters have thus far been content to use whatever variety was available in the market—generally passive or stale oxygen; whereas, *therapeutic oxygen*, as it may be properly termed, is a far more active condition of the element. This variety is sometimes called ozonized oxygen, or "ozone oxygen," and probably consists of ordinary oxygen with an added trace of ozone. Failure to recognize these distinctions readily accounts for the varying results reported by different, as well as indifferent, observers. In the parlance of the day, there is oxygen and oxygen; and experimenters ought, first of all, to know what variety or condition of this element they are using.

That oxygen, in the proper or active condition, and intelligently exhibited, has a legitimate province in rational medicine seems now to have been definitely established. It is not, however, in the field of respiratory diseases that its use is followed by the most marked success, as is usually and unthinkingly assumed. Its *forte* unquestionably lies in the direction of inducing and aiding hæmatosis. Nevertheless, most scientific, perhaps because *too* scientific, observers have refused to give it much credit even in this direction, assuming that, in order to prove definite results, they must first demonstrate a definite increment or absorption of the gas, and its increased and excessive presence in the blood immediately after its therapeutic exhibition; whereas, it is rational to suppose that when used in a nascent condition its chemical affinities are so powerful and so prompt that its salutary effects may all be accomplished without leaving evidence of any appreciable excess of the agent, in a free state, in the blood.

Professor McKendrick, in an able and scholarly address delivered before the British Medical Association, announced as a result of his investigations that, once satisfied with oxygen, the hæmoglobin of the blood "becomes indifferent, within limits, to any additional oxygen," even if the latter be forced into it under pressure. The natural inference from this observed fact is also lame and unsatisfactory, for the reason that it really proves nothing to the point, and has no reference to the therapeutic use of oxygen. It is like saying, "Here is an animal which will not eat or drink any more than it wants, and cannot be made to do so, even under the most strenuous urging." It is rational to assume that in health the animal system appropriates exactly the needed and normal supply of oxygen, and then very naturally "becomes indifferent" to any further supply. But in disease, at least in certain diseases, there are numerous obstacles and hindrances to procuring this normal supply: confinement in a vitiated or restricted atmosphere, enforced lack of exercise, diminished breathing capacity, etc. This is the juncture at which therapeutic oxygen becomes invaluable. The starved animal eagerly devours proffered food, and with equal avidity the deprived tissues seek and appropriate the vital element.

Some interesting experiments, conducted recently at Munich, demonstrated that after a day of severe physical exertion the human system has lost about

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one ounce of its normal proportion of oxygen. This loss is restored by rest and sleep; but if the rest be incomplete, if respiration be imperfectly performed, or the supply of oxygen be in any manner restricted and insufficient, gradual impairment will follow, and some form of chronic disease is finally established. The use of *therapeutic* oxygen, and it is proper to emphasize the term, is rationally indicated in all conditions in which a normal proportion of the element is presumed to be wanting. This opens to it a wide field, including a large number of chronic and some acute forms of disease. But it must be looked upon as an adjunct, not as a cure-all; at the same time more careful experimentation will doubtless prove its value in many conditions in which its use has not as yet been intelligently invoked.

The diseases in which it has thus far given most marked results are the various forms of anæmia, leukæmia, chlorosis, the indigestions, narcosis from the ill-timed use of anæsthetics or of narcotic drugs, in certain forms of asthma, and in that large class of maladies of which the original cause, whether hereditary or acquired, is found to be a vicious diathesis. Thus in lithiasis and gouty and rheumatic affections with cardiac and renal complications, decidedly favorable results have followed its persistent use.

119 EAST TWENTY-EIGHTH STREET.

THE EFFECT OF MERCURY UPON THE BLOOD OF SYPHILITICS.

BY EDWARD MARTIN, M.D.,
AND
H. M. HILLER,
OF PHILADELPHIA.

IN this country the admirable paper of Keyes[1] upon the influence of small antisyphilitic doses of mercury upon the number of red corpuscles in the blood, first attracted general attention to this most interesting line of research. Wilbouchewitch[2] in an apparently careful series of investigations concluded that small doses of mercury given for a short time increase the number of red blood-corpuscles; if continued, however, this increase is followed by a diminution much more rapid than the increase, and the anæmia thus produced may be more pronounced than it was at the beginning of treatment. On stopping the mercury there is again an increase. Keyes has pointed out the fact that the doses given by Wilbouchewitch were not small, and that in all probability an undue amount of mercury was given, since the patient rapidly lost weight where this condition was observed. Keyes holds that both syphilis and excessive doses of mercury lower the number of red blood-corpuscles below the healthy standard, but that mercury in small doses continued for a short or long time increases the number of these corpuscles both in the syphilitic and non-syphilitic. Ricord and Grassi[1] many years before had advanced as proven that potassium iodide increased the red blood-cells in syphilitics, while mercury had a directly contrary effect. We have not been able to find any detailed account of the amounts of mercury given by these observers, and as it was then the custom to administer the drug with an unsparing hand, we think it probable that doses much larger than necessary were given. These authors, together with the majority who have since written upon the subject, call attention to the great diminution of red blood-cells consequent upon the syphilitic poison. This belief in the direct blood-effect of syphilis is not, however, universal. Hayem[2] states that often there is no material change in the blood of syphilitics, though in females there may be slight anæmia, and that the red blood-corpuscles are never below 3,500,000, while the hæmoglobin ranges from 75 per cent. to 90 per cent. In regard to the action of mercury he states that it is followed by variable results.

In a first series of cases the blood lesion was improved, in another it remained stationary, and in a third it was slightly aggravated. As a conclusion Hayem states: "Therapeutic antisyphilitic doses of mercury do not have any particular effect upon the blood." In Keyes's paper the subject of the hæmoglobin richness of the corpuscles is not considered, and this is we think a matter of great importance, since it is well recognized that there may be a marked deficiency of hæmoglobin even though the corpuscular count be fairly high. Thus the immediate effect of severe hæmorrhage is to decrease both these constituent elements of blood in the same ratio. The corpuscles are subsequently replaced much more rapidly than the hæmoglobin, so that an estimation of the blood taken after a few weeks may show a large count by the hæmocytometer while the hæmometer will give an estimation far below normal. It may be fairly assumed that in normal blood when the Zeiss hæmocytometer gives a count of about 5,000,000 red blood-corpuscles, the Fleischl hæmometer will indicate about 100 per cent. of hæmoglobin. In persons of unusually robust health both corpuscles and hæmoglobin will range considerably higher. This is particularly the case with hæmoglobin. Thus, while a count of 6,000,000 is comparatively rare, we have repeatedly estimated the hæmoglobin as above 125 per cent.

Since it is important, before considering the effect of mercury upon the hæmoglobin, to know, not only what is the normal percentage of this constituent under ordinary circumstances, but also to be cogni-

[1] American Journal of Medical Sciences, p. 17, 1876.
[2] Arch. de Physiol., 1874, p. 509.

[1] Lecons sur Le Chancre. Fournier, Paris, 1860.
[2] Du Sang. Paris, 1889.

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zant of the fluctuations to which it is subject in various individuals and under varying conditions in the same individual, we have carefully examined with the hæmometer the blood of five robust men, all athletes and in trained condition, with the following results:

A. Before Exercise.

1. P.,	wt. 165.	Stroke of junior gig.	Hæmoglobin, 115.
2. H.,	wt. 143.	Bow " "	" 120.
3. B.,	wt. 148.	No. 2, Univ'y crew.	" 106.
4. L.,	wt. 172.	Bow " "	" 108.
5. W.,	wt. 165.	Stroke " "	" 120.

These estimates were taken immediately before a hard four-mile pull, the members of the University crew pulling an additional two miles. We had previously determined that the average loss of weight from this amount of exertion and the consequent free diaphoresis was two pounds. Thinking that there might be a marked alteration in the hæmoglobin as a result of the abundant loss of water, both through the lungs and skin, we made another estimate immediately upon the return of the crew to the boat-house:

B. After Exercise.

1. P.	Hæmoglobin,	115.	Unchanged.
2. H.	"	120.	"
3. B.	"	112.	Gain, 6.
4. L.	"	105.	Loss, 4.
5. W.	"	125.	Gain, 5.

It will thus be seen that no marked or constant effect was produced by violent and prolonged exercise.

Penzoldt[1] asserts that food without drink causes an increase in the estimate of hæmoglobin of over 10 per cent., and that the ingestion of liquid (1½ litre of beer) lowers it rapidly 12 per cent. By the free sweating induced by 0.02 gramme pilocarpin, he, in three-quarters of an hour, brought the hæmoglobin estimate from 80 per cent. to 100 per cent. If these statements are reliable, but little dependence can be placed upon any of the comparative hæmoglobin calculations, since a constituent of the blood subject to such marked quantitative changes under comparatively slight causes may vary in amount quite independently of any treatment to which the patient has been subject. For the purpose of determining this point three athletic men were kept without water for some time; their hæmoglobin was then examined; they were allowed to drink freely, and, in twenty minutes, another estimation of hæmoglobin was made. The following table will show the results:

1. M., weight 195 pounds. No liquid for 24 hours. Estimate immediately after dinner. Before taking liquid, hæmoglobin 125; 20 minutes after taking liquid (1 litre), hæmoglobin 112.

2. L., weight 172 pounds. No liquid for 10 hours .Before taking liquid, hæmoglobin 125. Aftertaking liquid (1 litre), 110.

3. H., weight 142 pounds. Did not abstain from liquid. Hæmoglobin 113. After drinking an additional litre of liquid, 113.

4. H., weight 142 pounds. No liquid for 15 hours. Hæmoglobin 120. After taking liquid (1 litre), 120.

In the first two observations there was a marked loss of hæmoglobin—upward of ten per cent. In the last two, both made upon the same individual, there was no change.

These figures show conclusively that when the hæmoglobin is examined such examinations must take place under similar circumstances, and that it is the average of many examinations rather than the results of single ones which will enable us to draw trustworthy conclusions. Thus, L., examined one day before dinner, shows a percentage of 108 for hæmoglobin; three days later, immediately after dinner, his hæmoglobin is 125; an hour and a half later, after copious draughts of liquids, his estimate is 110. In drawing conclusions from the results of blood examination the physique and previous history of the patient must also be borne in mind. Thus one of our observations shows the following:

M., hæmoglobin 120. Red blood-corpuscles 6,500,000. A reduction to the average percentage and count would, in this man, mean a decided blood change.

Again, as another difficulty in the way of rightly interpreting the hæmometer readings, must be considered the fact that many individuals of a most pronounced anæmic appearance in reality show on examination a practically normal blood. Sahli[1] calls attention to this fact, and Oppenheimer[2] confirms his observation, explaining it upon the theory of internal congestion causing reflexly an antagonistic action of the vaso-motors of the skin, as advanced by Dastre and Charcot.

It would seem, then, that while there is a so-called normal percentage of hæmoglobin, this normal is subject to wide variations; that the normal of the young trained athlete is far above that of the average dweller in cities; that even profound pallor is compatible with a full quantity of hæmoglobin; and that there is an almost hourly fluctuation in the percentage of each individual.

It will be seen at once that it is not possible to exclude all of the many sources of error. We eliminated them as far as possible, however, in our examinations of syphilitics, by making the examinations in each case as near the same hour of the day as might be. First, in regard to the anæmia produced by syphilis, we have the following observations:

1. Mrs. G., aged twenty-eight. General lymphatic enlargement; papulo-squamous eruption;

[1] Munchener medicinische Wochenschrift, August 20, 1889.

[1] Correspondenz-Blatt für Schweizer Aerzte, 1886.

[2] Deutsche medicinische Wochenschrift, Oct. 17, 1889.

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mucous patches; iritis; periostitis. No chancre or trace of one found. Probable time from inoculation two months. Hæmoglobin 78. Red blood-corpuscles 4,500,000.

2. R. G., aged twenty-four. Healthy, rosy-cheeked young Irishman. Chancre of lip; general glandular enlargement; no skin eruption. Hæmoglobin 110. Red blood-corpuscles 5,600,000.

3. M. S., aged nineteen. Buxom Irish girl. Papulo-squamous eruption; mucous patches. Hæmoglobin 98. Red blood-corpuscles 5,000,000.

4. H. T., aged thirty. Thin and anæmic in appearance. Chancre two months since; periostitis; mucous patches; papular eruption. Hæmoglobin 80. Corpuscles 4,800,000.

5. Mrs. McG., aged forty-five. Rather pale, but apparently strong, Irish woman. Two chancres on cheek; beginning general glandular enlargement. Hæmoglobin 95. Corpuscles 5,500,000.

In three cases, then, all showing the secondary eruption, there was a decided lowering of the hæmoglobin percentage, together with a diminution, though not in the same proportion, of the corpuscular count. In the fifth case the blood was apparently not affected, though, recalling the wide quantitative variations to which the hæmoglobin is subject, it cannot be said positively that there was not also in this case a diminution.

All authors are practically united upon the fact that, coincident with the development of secondaries, syphilitic patients lose weight and become pale and chlorotic in appearance. This is usually much more marked in women than in men. Indeed the term syphilitic chlorosis has been applied to this condition. Wilbouchewitch,[1] Särensen,[2] Keyes,[3] Haffer,[4] and others, have all stated that syphilis diminished the number of red blood-corpuscles. Schulgowski[5] found that not only the red blood-corpuscles, but also the hæmoglobin was diminished in quantity. Laache[6] arrived at similar results, and also stated that the syphilitic chlorosis is in its development closely connected with the roseola. Graeber[7] found both hæmoglobin and corpuscles diminished, and also observed that the red blood-corpuscles were of smaller size.

De Luca[8] objects to the name chlorosis, since he found no diminution in the amount of hæmoglobin, as is the case in true chlorosis. He states that in recent syphilis, in spite of the diminution in the red blood-corpuscles, the coloration remains normal. Stierling[9] found that about the same ratio of red blood-corpuscles to hæmoglobin obtained in syphilitics as in healthy individuals. Lezius,[1] who has perhaps made the most thorough systematic examinations of syphilitic blood, finds both hæmoglobin and corpuscles always reduced below the normal standard, the former to a far greater extent than the latter. He states that the blood of the anæmia of syphilis can only be distinguished from that of true chlorosis by the fact that in the former the diameter of the corpuscle is somewhat greater than normal, while in the latter this measurement is somewhat less. Lezius further states, as the result of repeated examinations, that as a rule, during the early period of secondary incubation (chancre) the hæmoglobin percentage is normal. Later, about the period of exanthematous eruption, a rapid diminution in this element of the blood can be noted. This diminution is observed during the whole course of the specific efflorescence; as with the disappearance of the latter the percentage of hæmoglobin is again increased. In our observations we have been frequently struck with the irregularity in the shape and size of the blood-corpuscles in syphilitics, and Lezius observes that he has noted poikilocytosis in most of his cases.

The effect of small doses of mercury in increasing bodily weight was noted by Hallopeau, Damourette, Basset, and many others, before exact methods of blood examination were known; and Keyes, Liégois, Robin, and Schlesinger have asserted that this drug increases the number of red blood-corpuscles. In regard to its effect upon the hæmoglobin, however, there is not much in evidence. De Luca says mercury has no effect upon the coefficient of the ratio between red blood-cells and hæmoglobin in syphilis. Schlesinger says the hæmoglobin is increased under small doses of mercury. Lezius gave three healthy individuals antisyphilitic doses of mercury by hypodermic injection. In two the percentage of hæmoglobin was slightly increased; in one, slightly diminished. In all the red blood-corpuscles were diminished in number. Blarez states that mercury has a direct oxidizing effect upon the hæmoglobin. Our observations are as follows:

Mr. T., aged thirty. Iritis; periostitis; papular squamous eruption. Chancre three months before.

November 20, 1889. Hæmoglobin 80; corpuscles 4,800,000; weight 106 pounds. Given:

℞.—Blue mass . . . . . 2 grains.
Dried sulphate of iron . . . 1 grain.
Three times daily.

Rapid disappearance of all specific manifestations. Cod-liver oil and beef peptonoids were also given.

December 20. Signs of stomach giving out. Ordered inunction of blue ointment, 2 drachms daily. Hæmoglobin 80; red blood-corpuscles 4,600,000; weight 114 pounds.

[1] Loc. cit. [2] Jahresberichte, 1876, i. p. 257.
[3] Loc. cit.
[4] Wiener medizinische Wochenschrift, 1882, No. 28.
[5] Petersburger medizinische Wochenschrift, 1879, p. 239 (quoted by Lezius).
[6] Die Anæmie, Christiania, 1883 (quoted by Lezius).
[7] Zur klinik Diagnost du Blutkrank, p. 42.
[8] Giorn. Ital., December, 1889.
[9] Deut. Arch. f. klin. Med., Bd. xlv. p. 75.

[1] Blutverand. bei der Anæmie Syph., Inaug. Diss. Dorpat, 1889.

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January 1. Hæmoglobin 90. Inunctions stopped. Protiodide of mercury, ¼ grain three times daily.

11th. Hæmoglobin 105. Diarrhœa for one week past. Reappearance of skin eruption. Ordered inunctions of blue ointment, 2 drachms daily.

23d. Hæmoglobin 95.

30th. Hæmoglobin 100; red blood-corpuscles 5,000,000; weight 121 pounds. Mucous patches on half-arches of both sides. Ordered a potassium chlorate and tincture of myrrh gargle.

February 23. Hæmoglobin 115.

March 23. Hæmoglobin 115; weight 125 pounds.

April 12. Hæmoglobin 115; red blood-corpuscles 5,600,000; weight 126 pounds.

This patient has been continuously taking mercury for five months. His improvement has been progressive; his hæmoglobin has risen from 80 to 115; his red-corpuscle count from 4,800,000 to 5,600,000; his weight from 106 to 126 pounds.

Mrs. McG. Mucous patches on half-arches; general papular eruption two months after chancre.

January 14. Hæmoglobin 95; red blood-corpuscles 5,500,000.

31st. Ordered protiodide of mercury, ¼ grain three times daily. Hæmoglobin 90; red blood-corpuscles 3,800,000.

February 9. Hæmoglobin 90; red blood-corpuscles 4,200,000.

14th. Mercury continued; regular increase of one pill a day since February 3, making fourteen pills to-day. Hæmoglobin 100; red blood-corpuscles 4,280,000. Bowels inclined to looseness; malaise.

26th. Fifteen pills a day since last count. Patient is weak. Hæmoglobin 106; red blood-corpuscles 4,100,000. Stopped mercurial treatment, and gave sulphate of quinine, 2 grains three times daily.

March 11. Eruption much more pronounced. Feels stronger and better. Hæmoglobin 80; red blood-corpuscles 3,660,000. Again put on mercury; ordered her to begin with three pills a day and to increase by one daily.

24th. Since last count has taken thirty-nine pills, each containing ¼ grain of protiodide of mercury. Throat sore; mucous patches. Has slept poorly for a month. Hæmoglobin 108; red blood-cells 4,100,000. Ordered compound tincture of cinchona, 1 drachm three times daily; stopped mercury.

April 7. Hæmoglobin 88; red blood-corpuscles 3,650,000. Ordered potassium iodide, 10 grains, and biniodide of mercury, $\frac{1}{12}$ grain, three times daily. Patient has not returned since.

The observations on this second patient were particularly valuable. Under very large doses of mercury her hæmoglobin percentage increased while the number of corpuscles was slightly diminished. On the mercury being stopped the hæmoglobin percentage dropped from 106 per cent. to 80 per cent., the red blood-cells from 4,100,000 to 3,660,000. A course of mercury, given in moderate doses in two weeks, brought the hæmoglobin up to 108 per cent., the corpuscles to 4,100,000. On the mercury being stopped again the hæmoglobin fell to 88 per cent., the corpuscle count to 3,650,000.

It is to be noted that while the hæmoglobin percentage is higher than when this patient first came under observation, the number of corpuscles is considerably below that which was observed at that time.

We believe that neither the blood condition in syphilis nor the action of mercury upon the blood has yet been formulated. Each observer has seen too few cases for comprehensive conclusions. The previous condition of the patient before contracting syphilis has a modifying influence upon the blood which has not been duly considered. In opposition to Lezius we believe that in the majority of cases the diminution in hæmoglobin is less than the corpuscular count would suggest. Our observations have certainly accorded more with those of De Luca in this respect. We think it must also be granted that both corpuscles and hæmoglobin are reduced in quantity by syphilis, and that mercury prevents the reduction. That the mercury acts as a tonic remains to be proven, since increase in the number of blood-cells and in the body-weight may be the result of retarded oxidation as well as of tonic action.

We believe that the "tonic" dose for each individual must be determined by his susceptibility to the drug. Thus we have given for weeks at a time three grains of protiodide daily with beneficial effect, and again we have produced marked constitutional effects by half a grain of the same drug given three days in succession. An examination of the blood will afford a valuable guide as to the amount of mercury to be given, since an overdose produces a very rapid diminution in the corpuscular count and the amount of hæmoglobin. It must be borne in mind, however, that in the beginning of mercurial treatment there is often a falling-off of the blood condition due to the disease itself and apparently taking place before the mercury has begun to produce any effect.

It is mainly in the hope of suggesting careful examination into the subject on the part of many observers, and consequently the publication of an amount of clinical material sufficient for the establishment of general conclusions that this communication is offered.

THREE CASES OF VARICOSE VEINS IN THE BROAD LIGAMENT.

BY BARTON COOKE HIRST, M.D.,
PROFESSOR OF OBSTETRICS IN THE UNIVERSITY OF PENNSYLVANIA.

CASE I.—A woman, who had given birth to two children, one living, the other destroyed by the forceps, was seen by the writer after she had been in labor many hours. The child's head, while still above the pelvic canal, was tightly jammed down upon the brim; the os was well dilated, the lower uterine segment stretched to a dangerous degree.

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Forceps had already been tried for several hours without success. Craniotomy was performed with no difficulty, and extraction was easily effected. A careful examination was made for a rupture of the uterus, but no sign of it was discovered. The woman did perfectly well for eighteen hours; then suddenly went into collapse and died shortly afterward. A careful post-mortem examination showed the cause of death to be a ruptured bloodvessel in the outermost portion of the left broad ligament and hæmorrhage into the peritoneal cavity. The bloodvessels of the broad ligament were, of course, enlarged, as they are in every woman who is pregnant or has been recently delivered, but it is impossible to say whether the enlargement was extraordinary, for the region was so thoroughly depleted by the profuse hæmorrhage. This was, however, probably the case, for many thousand broad ligaments are subjected to a great strain during labor without a rupture of bloodvessels within them. It is only natural, therefore, to presume that the veins were much distended and their walls thinned in this case.

CASE II.—M. N., aged thirty-nine, has had four children, the last six years ago. She has been a widow for several years. Menstruation had been regular until six weeks before the patient came under my observation; at that time, during a menstrual period, she attempted to carry a heavy coal-scuttle up a flight of stairs, but on the way was seized with violent pain in the abdomen and faintness. After this there was a constant flow of blood from the uterus associated with pain in the left hypogastric region.

The day on which I first saw the patient, she had taken a long street-car ride to visit her daughter in the Philadelphia Hospital; while walking across one of the court-yards she fell to the ground in a faint and was taken to a bed in the medical ward and from there was transferred to my department. An examination under ether revealed free fluid in Douglas's pouch and an induration in the left broad ligament. Laparotomy was done the following morning in the belief that the case was one of ruptured tubal pregnancy. On incising the peritoneum a large quantity of dark blood welled out; clots were found adherent to the intestines, and in the left broad ligament was a mass of old clotted blood which could be seen and felt through a rent in the posterior layer of the peritoneum covering the ligament. The tube was intact. As there were no traces of fresh hæmorrhage, the clots were picked from the intestines, the fluid blood washed out of the peritoneal cavity, and the abdominal wound closed without drainage. Her recovery was uninterrupted.

Here, no doubt, there had been a large pelvic hæmatoma from rupture of a bloodvessel during menstrual engorgement, followed by rupture of its peritoneal covering six weeks later. The condition found within the abdomen precluded the possibility of tubal pregnancy, and the woman denied, with perfect truth I am convinced, the possibility of impregnation.

CASE III.—L. B., aged thirty years, has had six children, the last two years ago. The day following this delivery she was obliged to arise to do heavy housework. Since this time she has suffered from severe recurrent pelvic pains, which have incapacitated her for work. A week before entrance into the Philadelphia Hospital she had aborted in the early months of pregnancy. On examination, a rather large and exceedingly sensitive tumor, which felt cystic, was discovered in Douglas's pouch. The uterus was anteverted and fixed. The examination, although carefully conducted, lighted up a sharp attack of pelvic peritonitis, which, however, quickly subsided under treatment. A subsequent examination confirmed the result of the first. With the idea that a bad pyosalpinx would be discovered, laparotomy was advised and agreed to.

A tumor was found in the right broad ligament and behind the uterus, to which it was loosely adherent by inflammatory exudate. It was seen to be independent of the tube, which, though slightly enlarged, presented a fairly normal appearance. On bringing the mass in sight, it was startlingly like a loop of intestine; placing intestine and tumor side by side, there was absolutely nothing to distinguish them in appearance. The ligature had already been placed below the tumor, but not tied; an incision was made in it to discover its nature and a great gush of blood told the tale. The thread was quickly and firmly tied, and the mass removed. It was found to consist of many bloodvessels, into some of which I could place the tip of my little finger. The woman made a good recovery, and when I last saw her, some months after the operation, she had been relieved of her former symptoms. There was still some exudate on the right side, but the uterus was in good position, and fairly movable.

The existence of varicose veins in the pelvis as a distinct disease, with distressing symptoms and dangerous possibilities, has not, I think, secured the recognition which its importance deserves. The occurrence of three cases in the experience of a single individual within a year, would indicate that the condition is by no means uncommon. A few other observers have recorded like experiences, and in occasional reported cases, one is inclined to think that enlarged vessels in the broad ligament had been overlooked or mistaken for something else. For instance, in a laparotomy recently described, complicated by rupture of the iliac vein, the vessel more probably was in the broad ligament, but by its size and enormous distention exactly simulated one of the great venous trunks of the body.

CLINICAL MEMORANDA.

MEDICAL.

A Case of Croupous Pneumonia with Pericarditis, Simulating Pneumothorax. — Michael G., aged twenty-eight years; married; born in Hungary; was admitted to the Pennsylvania Hospital April 12, 1890. Patient had been

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sent from Phœnixville, and had walked to the railroad station and sat up in the cars on his way to Philadelphia.

Upon admission his respirations were 56; pulse 100, intermittent, and small; temperature 103.5°.

No history of his illness could be obtained, as he knew only a few words of English. Heart was displaced far to the right side, the apex beat being felt beneath the xiphoid cartilage, and over the usual præcordial area a tympanitic percussion note was elicited. A distinct murmur was heard over the heart, which appeared to be exo-cardial. The right chest showed good expansion, that of the left was very defective, and the patient complained of much pain in the left side.

On the left side there was absolute flatness as far as the third rib, below this point the percussion note was high-pitched, but at the same time markedly tympanitic. Breathing was distant and distinctly amphoric in character below the left third rib and over an extended area of the lower two-thirds of the left chest anteriorly. Metallic tinkling was heard over the lower third, and the bell sound could be distinctly elicited. Patient was too weak to enable me to make a very thorough investigation, and I think no examination of the back of the chest was made. From the coincidence of several of the most marked signs of pneumothorax, from the apparently sudden onset, great pains, dyspnœa, and prostration, I was inclined to regard the case as one of pulmonary fistula and resulting pneumothorax, probably following an attack of pneumonia with pulmonary abscess.

He was ordered carbonate of ammonium and whiskey, and sulphate of strychnine one-fortieth of a grain every four hours.

April 13. Condition critical; some yellowing of the scleræ.

14th. Pulse irregular; great dyspnœa.

15th. Failed rapidly, and died at noon markedly jaundiced.

There had been little or no expectoration during the patient's stay in the hospital.

Autopsy, twelve hours after death. Pericardium very much thickened and adherent to sternum, diaphragm, and surrounding parts. Marked diaphragmatic pleurisy. Heart was drawn over to the right by the pericardial adhesions, and the apex was beneath the xiphoid. Flakes of lymph were thickly studded over the whole inner surface of the parietal layer of the pericardium and over the outer surface of the visceral layer and some adhesions between the visceral and parietal layers at the base of the heart. While the pericarditis seemed to be in part recent, the adhesions to the diaphragm were apparently old. Hepatization of nearly the whole left lung. Kidneys normal.

While a more careful examination in this case would undoubtedly have saved me from falling into the error of diagnosis that I made, the diagnosis was, I think, not without its difficulties, and the possibility of such a mistake must be my excuse for reporting the case in detail.

HENRY M. FISHER, M.D.,
Physician to the Episcopal Hospital, etc.
PHILADELPHIA.

TOXICOLOGICAL.

Nitroglycerin Poisoning. — The patient was a married woman twenty-nine years of age; in poor health, and suffering greatly from cardiac asthma. When I first saw her she had been taking a mixture which had produced symptoms of mild belladonna poisoning. The action of the heart was then feeble and irregular, and I prescribed drop doses of a one per cent. solution of nitroglycerin; also a solution of morphine, not only to produce sleep but as an antidote to the belladonna. Early on the following morning she arose to take a dose of the morphine solution, but by mistake swallowed two drachms of nitroglycerin. She soon remarked that the medicine "affected her head like brandy."

I was sent for, and on arrival found her with cold extremities and pale face; pulse strong and regular—eighty beats to the minute. She was semi-conscious, and the asthmatic breathing of the previous evening was still present. She apparently suffered from gastric distress, and subsequently told me that she had a desire to vomit.

A hot mustard foot-bath was given, and an emetic of mustard in coffee was administered, which was quickly followed by vomiting. As her condition was no longer alarming I left, with directions that her chest should be enveloped in a flaxseed poultice and that she remain in bed. On my return, later in the day, the dyspnœa had markedly subsided, and she had nearly recovered from her distressing symptoms.

After recovery she told me that she imperfectly recollected the events following the dose of nitroglycerin, though she remembered that breathing was more difficult than usual and that she was nauseated.

LOUIS KOLIPINSKI, M.D.
WASHINGTON, D. C.

MEDICAL PROGRESS.

Methacetin.—DR. C. SEIDLER reports his results in the treatment of a number of different diseases with methacetin (*Berliner klinische Wochenschrift*, April 14, 1890). In 28 cases of typhoid fever, pneumonia, tuberculosis, and influenza, in adults, a satisfactory antipyretic effect followed the administration of the drug.

In moderately high temperature—100° to 102°—doses of from 4 to 5½ grains are sufficient to reduce the temperature to normal with safety, but in higher grades of fever the dose must be increased to 6 or 7 grains. With a few patients only did the temperature fail to fall more than two degrees. In a patient with severe phthisis with a regular evening temperature of 104°, 5 or 6 grains of the drug about 3 o'clock in the afternoon prevented the temperature from rising above 100½°; but otherwise the patient was apparently not benefited. In most fever cases the fall in temperature was accompanied by a more or less profuse sweat, directly proportionate to the weakness of the patient, which fact unfits the remedy for use in phthisis. Headache, tinnitus aurium, deafness, giddiness, or vomiting were not noticed in any case after the administration of methacetin.

In two cases of acute articular rheumatism the drug acted promptly. The pain diminished on the first day after three doses of 4½ grains each, and on the third day pain, fever, and swelling had disappeared not to return.

As an antineuralgic, methacetin is less useful. For this purpose the author at first employed doses of 1½ to 4 grains, but soon found that to produce any effect larger

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doses—5 to 8 grains—were necessary. In two cases of trigeminal neuralgia he prescribed 4½ and 6 grains of methacetin, in the first case with no effect; in the second case three doses of 6 grains each checked the attack. No influence in preventing the return of the disease was observed. The drug was also of little value in the neuralgic pains of locomotor ataxia. In the prodromal headaches of scarlet fever and typhoid fever, and in the headaches of gastric catarrh and nephritis, the effects were good, though in the author's experience antipyrine and antifebrin act more promptly in such conditions.

In conclusion, according to Seidler, methacetin is an efficient antipyretic, free from harmful effects other than the free sweating produced. It is also probably an excellent remedy in the treatment of acute articular rheumatism. As a nervine, and especially as an antineuralgic, it is not very efficient, though possibly it may be used to intensify the effect of other remedies used for this purpose.

Trichloracetic Acid in Diseases of the Nose and Throat.—EHRMANN, of Heidelberg (*Therapeutische Monatshefte*, April, 1890), reports success with trichloracetic acid as a cauterant in diseases of the nose and throat. The crystals were applied by means of a silver applicator. The treatment was employed in 140 cases, including hypertrophy of the turbinated bodies, circumscribed polypoid hypertrophy, hypertrophic tonsillitis, hypertrophied uvula, follicular pharyngitis, and hypertrophy of the lingual glands. In 87 of these cases the cauterization was made but once, in 30 cases twice, and in the remainder from three to five times.

The author believes that trichloracetic is much preferable to chromic acid, in that the cauterant effect is more localized and forms a much thicker eschar.

As an astringent, Ehrmann has employed the acid in the following mixture:

℞.—Iodine	2 grains.
Potassium iodide	3 "
Trichloracetic acid	4½ "
Glycerin	7½ drachms.

But as yet he refrains from expressing an opinion upon the value of this application. The acid used was that manufactured by Merck.

Gonorrhœa in a Brother and Sister aged Six and Eight Years.—DR. F. M. CRANDALL, of New York, reports the case of a boy six years of age who was brought to the Polyclinic on February 6th with a history of a urethral discharge dating from about Christmas. On examination, the prepuce was found to be swollen and inflamed, and there was a free flow of pus from the urethra. Microscopical examination of the pus revealed numbers of gonococci of typical appearance and grouping.

Under treatment by an alkaline diuretic and an injection, there was a marked decrease in the amount of pus, but a slight gleety discharge still continues. Recent microscopical examinations show but a very small number of gonococci.

On February 11th (five days after the first visit of the boy) his sister, aged eight years, was brought, with a history of a vaginal discharge discovered by the mother about January 28th. Examination showed a profuse purulent discharge from the vagina, with considerable redness and swelling of the vulva. Examination of this pus also revealed gonococci in great abundance.

Vaginal injections of sublimate solution (1 to 5000) were followed by rapid improvement and complete recovery by March 1st.

The author believes that the boy probably acquired the disease from an uncle with whom he slept, and who is known to have had a urethral discharge. The girl then acquired it from her brother, for intercourse is acknowledged by both parties.

Subsequently, however, the boy, following the example of an illustrious ancestor, alleged that the woman had beguiled him and was the author of his woe; that his sister had been infected by a young man who had been in the family, and that his own disease had been acquired from her. It is at least quite certain that the gonococci in the two cases originated from the same source.

The boy, it may be added, is strong, active, and rather large for his age. He is precocious, exceedingly shrewd, and evidently intelligent upon matters which boys of his age should know nothing about. It is a matter of considerable interest in such cases to know how much is due to inherited tendency and how much to vile company and vicious teaching.—*New York Medical Journal*, April 26, 1890.

Transposition of the Abdominal Viscera.—According to the *Lancet*, Mr. Treves, in recently performing an ovariotomy, discovered complete transposition of the abdominal viscera. The liver was upon the left side, the spleen upon the right; the cæcum was in the left iliac fossa, the sigmoid flexure in the right; the aorta ran along the right side of the vertebral column. The stomach was transposed, the pyloric extremity being directed toward the left. It is probable that this condition also existed in the chest, for the apex beat was felt to the right of the sternum.

Antiseptic Management of Vaccination.—To avoid the dangers of vaccination, DR. ALFRED LEACH adopts the following precautions (*British Medical Journal*, April 19, 1890):

1. The lymph is obtained on the day it is to be used.
2. The instruments, the patient's arm, and the unopened tube of lymph are washed in a disinfecting solution.
3. In four places small scratches, and valvular punctures are made with a Gräfe's cataract knife charged with the lymph.
4. When the scarifications have become perfectly dry they are dusted with bismuth and a pad of dry lint is applied.
5. After the second day the nurse is directed to wash the part daily with a gentle stream of cold water, no sponge being allowed to come in contact with the wounds.

As a result of this careful treatment the author has seen but one case of inflamed arm during the past six years.

Excision of the Mastoid Cells.—HESSLER, of Halle, thinks that in mastoid disease Wilde's incision, which

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consists in simply incising the tissues down to the bone, is of use when periostitis alone is present, and that it is insufficient when the cells are involved (*Archiv für Ohrenheilkunde*, Nos. 2 and 3). In doubtful cases he advises raising the periosteum to examine the condition of the bone beneath. If, from the appearance of the bone, disease of the mastoid cells seems probable, he performs so-called excision of the cells. This consists in opening the spaces and removing the carious portions without opening the mastoid antrum. The operation is, of course, inefficient if an abscess of the antrum is present. The author tabulates 66 cases of mastoid operation—89 of opening the antrum, 4 of Wilde's incision, and 23 of excision of the cells. In all of the latter cases there was great improvement, none requiring subsequent opening of the antrum.—*Weekly Medical Review*, April 19, 1890.

Tetanus Treated by Parenchymatous Injections of Carbolic Acid.—BIDDER, of Berlin, reports the following case (*Deutsche medicinische Wochenschrift*, March 6, 1890): A child of three and a half years received a crush entirely removing portions of the phalanges of the third and fourth fingers. Fourteen days after the injury typical symptoms of tetanus developed. The wound was then washed with a 5 per cent. carbolic acid solution, and dressed with a weaker solution. Internally one tablespoonful of a 3½ per cent. solution of chloral was given several times daily. The symptoms then somewhat improved and the jaws could be separated to a distance of three-fourths of an inch, though convulsions recurred when the child attempted to drink. The wound being in an unhealthy condition, the author injected hypodermically, in various places around it, a syringeful of 2 per cent. solution of carbolic acid. On the following day vigorous granulations appeared, the quick pulse became slower, the profuse perspiration disappeared, and the rigidity of the neck slowly relaxed. Three weeks later the wound had cicatrized and the patient was practically well. It is to be noted that during the course of the disease about three drachms of chloral were administered, which doubtless, in a measure, contributed to the result.

Hydrastis Canadensis.—According to *L'Union Médicale*, DR. CABANÉS has published a treatise upon the therapeutics of hydrastis Canadensis, in which he concludes:

1. That preparations of hydrastis Canadensis are useful remedies in the treatment of uterine hæmorrhage, and in the treatment of certain diseases of the stomach.

2. The most efficient preparations are the fluid extract, which may be given in doses of 60 to 80 minims, and the tincture (20 per cent.), which may be given in doses of 20 minims.

3. The drug is a vaso-constrictor, which explains its effect in checking uterine hæmorrhage.

4. In cases of excessive menstruation it should be administered between the periods.

5. The alkaloids of the drug have not yet been sufficiently studied to make their use advisable.

Prescriptions for Gout.—According to the *Internationale klinische Rundschau*, ELOY uses the following in gout:

℞.—Iodide of lithium . . 3½ grains.
Extract of gentian . a sufficient quantity.—M.

Divide into 20 pills, of which three or four should be taken daily.

or

℞.—Iodide of lithium . . . 1½ drachms.
Syrup of orange . . . 6 ounces.—M.

Two or three tablespoonfuls to be administered daily.

In cases of gout with symptoms of nephritis HUCHARD prescribes the following:

℞.—Extract of stigmata of maize . 1½ drachms.
Benzoate of sodium } of each 45 grains.
Carbonate of lithium }
Oil of anise . . . . 3 drops.—M.

Divide into sixty pills.

Two pills to be taken before meals three times daily for twenty days in each month.

Painful Second Dentition.—In the oral pain caused by the eruption of the permanent teeth, DR. LOUIS STARR (*Therapeutic Gazette*, April 15, 1890) recommends painting the gums with the following solution:

℞.—Hydrochlorate of cocaine . 4 grains.
Glycerin . . . . 2 drachms.
Water sufficient to make . 1 ounce.—M.

When the pain is caused by molar teeth free lancing with an oblique crucial incision is to be recommended. Dr. Starr considers the following mixture also of much use in softening the gums and lessening pain:

℞.—Chloride of zinc . . . 1 grain.
Wine of opium . . . 1 drachm.
Glycerin . . . . 2 drachms.
Rose-water sufficient to make 1 ounce.

Apply to the gums with a brush or soft cloth three times daily.

Formula for Creasote.—The following formula for prescribing creosote is quoted in the *Columbus Medical Journal*:

℞.—Creasote . . . . . 20 minims.
Alcohol } of each . . 6 drachms.
Syrup }
Cinnamon water . . . 3 ounces.—M.
Dose.—One tablespoonful.

Constipation in Women.—DR. LUTAUD recommends the following in obstinate constipation occurring in women:

℞.—Citrate of iron and ammonium 31 grains.
Fl. extract of cascara sagrada 32 minims.
Saccharin . . . . 8 grains.
Water . . . . 2½ ounces.—M.

A half teaspoonful three times daily before meals.

Depilatory Paste.—The *Pittsburg Medical Review* quotes the following:

℞.—Sulphate of barium . . 2 parts.
Pulverized starch } of each 1 part.—M.
Oxide of zinc }

Before using, sufficient water is added to convert into a paste, which is then applied to the skin and washed off when it causes pain.

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SATURDAY, MAY 17, 1890.

THE TREATMENT OF HABITUAL CONSTIPATION.

AMONG minor ailments probably none is more annoying to the physician or more disheartening to the patient than habitual constipation. One after another a series of drugs will be prescribed, each affording a measure of relief at first, but soon becoming powerless. Similar results are often experienced with the various articles of diet reputed to have laxative properties, until finally the patient, disgusted with doctors, learns to depend upon proprietary preparations, or, still worse, upon enemata. There are other methods of treatment, however, which are of permanent benefit, but which, unfortunately, are too frequently neglected by the physician in his desire to give immediate relief.

NOTHNAGEL, in a recent lecture on this subject (*Wiener medizinische Presse*, Nos. 10, 11 and 12, 1890), considers massage of the abdomen, electricity, and abundant exercise, the three most important elements in treatment. Abdominal massage cannot be properly peformed by the patient upon himself, the effort required causing contraction of the abdominal muscles, which prevents deep pressure and manipulation. An efficient substitute for a *masseur* is a metal ball, weighing from three to six pounds, and covered with cloth to prevent chilling the skin. Every morning the patient should roll this over the course of the large intestine for five or ten minutes, beginning in the right iliac region. Nothnagel warns us not to expect much from massage for several weeks, or perhaps months, but thinks that in the end it is invariably of benefit. Electricity may be used either in the form of galvanism or faradism, but the faradic current is, perhaps, the most useful. It is entirely unnecessary to place one pole in the rectum, as advised by Leubuscher and others, a strong current over the colon being sufficient. The patient should take considerably more than his accustomed exercise, not only walking and riding, but systematically performing the various calisthenic movements in his room or in a gymnasium. Many cases of slight chronic constipation can be greatly relieved by drinking one or two glasses of cold water on rising in the morning.

Cases of long duration will react to all methods of treatment very slowly, and in the meantime measures must be adopted to prevent them from suffering from the Protean symptoms of fæcal accumulation. For this purpose a resort to laxative mineral springs stands at the head, but as many patients are unable or unwilling to leave their homes for a sufficient length of time, drugs or enemata must be employed. Under such circumstances Nothnagel believes that it is better to avoid drugs, if possible, and to use enemata alone. Enemata, for this indication, may consist of pure water or may contain olive oil, common salt, or castor oil, but glycerin is, as a rule, the most satisfactory enema, from one-half to one drachm being thrown into the rectum, or glycerin suppositories may be used.

The diet should be nutritious and easily digested, and acid fruits should be freely taken.

If, in spite of the patient employment of these measures, an occasional laxative becomes necessary, we have a long list of drugs from which to choose, any one of which may be particularly suited to the case in hand, though it is wiser to avoid calomel, castor oil, and all drastic purgatives, and to employ small doses of the vegetable laxatives, among which Nothnagel holds small doses of tamarind, aloes, and podophyllin in high esteem. A pill which he frequently uses is composed of podophyllin 4½ grains, extract of aloes and extract of rhubarb, of each 45 grains, divided into forty pills, with extract of taraxacum as an excipient. One or two of these may be taken at bedtime. Cascara sagrada, which is undoubtedly the favorite remedy in this country for such conditions, is merely referred to by Noth-

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nagel, and seems to have been used but little by him.

Another method, which probably originated in France, and which, though but little known, we have seen act most efficiently, is the daily administration of a tablespoonful of unground flaxseed, which has macerated for a few hours in water. The dose is not disagreeable to most patients, and in some cases it seems to be more than palliative.

Much of this advice may seem trite and time-worn to some, but observation has convinced us that many physicians are unjust to their patients and to themselves in the treatment of constipation; prescribing a laxative pill, giving a few suggestions about diet, and dismissing the case from their minds. To such we would repeat, that the foundation of treatment should be massage of the abdomen, electricity, and exercise, and that every laxative dose prescribed probably prolongs the time required to effect a cure.

THE DIAGNOSIS AND TREATMENT OF SALPINGITIS.

IN obtaining a clear idea of this subject a consideration of the pathology of the affection is necessary. The observations of MARTIN upon 287 cases of salpingitis, and a recent excellent paper by LABADIE-LAGRAVE, in a supplement to *La Médecine Moderne*, April 5, 1890, throw light upon this interesting and disputed point. We may briefly divide salpingitis into catarrhal or vegetating; suppurating salpingitis, whether from septic, puerperal, gonorrhœal, or tuberculous infection; tubal dropsy; and hæmatoma of the tube occurring without inflammation, often the earliest stages of tubal gestation. The anatomical structure of the fimbriated extremity of the tube is such as to favor the retention of secretions and predispose to inflammations. In a very large percentage of cases these affections are the result of endometritis, which often follows puerperal sepsis. It is easy to understand how a specific, tubercular, septic, or cancerous infection in the endometrium should result in salpingitis; but an explanation is not so apparent in the case of virgins, in whom none of these causes has been present; when we consider that the infectious diseases of childhood not infrequently result in inflammation of the vulva and vagina, a rational explanation is found for such cases. Bacteriology confirms these points by demonstrating the presence of the various infectious microörganisms.

Regarding clinical history, the disorder frequently runs an insidious course. With the exception of cases of acute infection, resulting in pelvic peritonitis, the disease may persist as such. Functional troubles are its first evidences, with indefinite pains, soreness, tenderness upon palpation, great discomfort in almost every attitude when prolonged, irritation about the bladder and rectum, and disordered menstruation. The occurrence of salpingitic colic is a very significant feature; it is characterized by sudden lancinating pains, which the patient compares to the pains of labor, referred to the hypogastrium or the location of the tube, ceasing suddenly, followed by the expulsion of several tablespoonfuls of serous or bloody fluid, expelled by the spasmodic contraction of the muscular tissue of the tube. If a tumor has been previously found, upon examination after one of the paroxysms, it has disappeared. A dislocation of the uterus ordinarily becomes reduced after the tube is emptied. A continuance of adhesive inflammation obliterates the fimbriated extremity of the tube, causing sterility. Vaginal examination discloses the tube enlarged, feeling like an irregular nodulated cord, in size and elasticity like the femoral artery, and exquisitely painful upon touch. The best method of examination is that with the patient upon the back, the thighs well flexed upon the abdominal wall, and a mild degree of anæsthesia is frequently necessary.

The subacute varieties of salpingitis develop a tumor, which renders diagnosis more easy. To differentiate this form from conditions resembling it, retroflexion, prolapse of the ovaries, ovarian cyst, phlegmon of the broad ligament, uterine lymphangitis, and tubal gestation, must be considered, though the latter can seldom be recognized with positiveness as more than a tubal hæmatocele.

The prevention and treatment of endometritis are of the greatest importance in the prophylaxis of salpingitis. Such should consist of absolute rest in bed, and disinfection of the genital tract by antiseptics. If this does not promptly reduce an elevated temperature the uterus should be curetted, thoroughly washed out, and disinfected with iodoform. When salpingitis exists it should be treated first by securing free and thorough drainage by dilating the uterus, removing vegetations of the endometrium, which frequently occlude the uterine openings of the tube, and disinfecting the uterine cavity. A tupelo tent furnishes an excellent dilator in these cases, and the curretting should be followed by the application of iodine and carbolic acid, or of car-

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bolic acid and glycerin, or creasote and glycerin, to the interior of the uterus. Drainage may be kept up by the insertion of a strip of gauze saturated with iodoform or salol in glycerin, which should be carried to the fundus, and allowed to remain there; the gauze may be renewed every two or three days, and its application continued for several weeks. Uterine suppositories, containing salol or iodoform, may also be used to advantage.

The general treatment of the patient consists in absolute rest, in counter-irritation over the hypogastrium by the thermo-cautery, the application of which leaves a surface healing more rapidly, and less apt to suppurate than that produced by blisters; massage; the administration of tonics addressed to the patient's nutrition; the application of the faradic current, and careful attention to assimilation and excretion.

Laparotomy should be performed only in urgent cases, when the presence of large tubal or pelvic abscesses threatening septic infection is diagnosed. In chronic pelvic peritonitis which resists other treatment, laparotomy, with extirpation of diseased tissue is justifiable. It must be emphasized that these cases belong properly to the field of gynecology, and not to the domain of surgery.

STREET NOISES.

EVERY practising physician is but too well aware of the hindrances to recovery which often arise from the street noises of a great city. Many of these are inevitable, and recur with such frequency that even the nervous grow accustomed to them. It is the unexpected and, for the most part, preventible noises, like street music, which break in, often with most perilous effect, on the rest of nervous patients, on the first slumber which follows the crisis in some acute disease, or on the sleep either of convalescence, or, more serious still, of the stage which precedes surrender to disease or a successful struggle with its first approaches.

European cities have long since provided protection against street music by giving a householder the right to procure the arrest of any musician who persists in playing when he has been asked to desist. In Philadelphia, and in most American cities, a right of action against a penniless organ-grinder for maintaining a nuisance is the only protection afforded at present by law. Unless an organ-grinder can be bribed to move on, or a street band persuaded by a fee to go elsewhere, both have a full right to remain when every moment of their stay under the window of a sick-room may mean torture, and, perhaps, most serious consequences to the patient.

Mr. Theodore M. Etting has introduced in Councils of Philadelphia an ordinance drawn on the law long in operation in London, which, under suitable restrictions, gives a householder the legal power to protect the sick-room from street music. It deserves the approval of every physician who understands the great difficulty, under the most favorable circumstances, of securing quiet and rest for his patients in a great city, and it supplies an important hygienic lack in the ordinances of this city as they stand.

THE MEETINGS IN WASHINGTON.

IN the following columns we present to our readers correspondence relating to the important meetings held in Washington during the last ten days, embracing that for the Pharmacopœia revision, the Association of American Physicians, and American Surgical Association. Many of the most prominent papers read have been obtained for the columns of THE MEDICAL NEWS, and will appear as rapidly as space permits. In the issue of next week the full report of the proceedings of these learned bodies will be presented to our readers, it being our endeavor to carry out, as far as possible, the object of THE MEDICAL NEWS to be a medical newspaper.

CORRESPONDENCE.

WASHINGTON.

Seventh Decennial Convention for the Revision of the United States Pharmacopœia.

To the Editor of THE MEDICAL NEWS,

SIR: The Seventh Decennial Convention for the Revision of the United States Pharmacopœia convened here at twelve o'clock on Wednesday, May 7th, with the President, Robert Amory, M.D., of Boston, in the Chair.

Immediately upon coming to order the President announced the names of those who would form the Committee on Credentials, and this committee was instructed to report at the opening of the afternoon session. Having finished this business the Convention adjourned, and after forming in line, proceeded to the White House, where they were received by President Harrison.

At the opening of the afternoon meeting the delegates from the various medical and pharmaceutical colleges, and from the medical and pharmaceutical associations, were instructed to nominate one member from each delegation, in order that a Nominating Committee for the officers during the coming ten years and for the remainder of the session might be chosen. The rest of the business of this session was of no importance. The Convention adjourned at a little after four o'clock.

In the evening the Nominating Committee, consisting

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of nearly one hundred members, met in the committee-room of the Arlington Hotel at 8 o'clock and proceeded at once to the nomination of the proper officers—Dr. Wood, of South Carolina, being chosen Chairman. After a small amount of preliminary business the committee unanimously elected Dr. H. C. Wood, of the University of Pennsylvania, as President of the Convention, and then nominated five Vice-Presidents, rather than two, as has heretofore been the custom. The following gentlemen were nominated: First Vice-President, W. S. Thompson, Washington, D.C.; Second Vice-President, Dr. D. W. Prentiss, Washington, D. C.; Third Vice-President, Dr. J. M. Flint, U. S. N.; Fourth Vice-President, A. E. Ebert, Chicago; Fifth Vice-President, Wm. M. Searby, San Francisco. The result of the ballot for the nomination of Secretary resulted in the election of Dr. H. A. Hare, of Philadelphia, as Secretary, and Mr. G. H. Charles, of St. Louis, as Assistant Secretary. From 10 o'clock until half-past 2 in the morning the time of the Committee was consumed in the nomination of the Committee of Revision, which eventually was made up in the following manner: Dr. Charles Rice, Chairman, New York; Joseph P. Remington, First Vice-Chairman, Philadelphia; Dr. Robert T. Edes, Second Vice-Chairman, Washington; Dr. C. O. Curtman, Third Vice-Chairman, Missouri; Dr. J. M. Flint, U. S. N., Treasurer; Dr. Roberts Bartholow, Philadelphia; P. W. Bedford, New York; Dr. F. A. Castle, New York; Dr. N. S. Davis, Jr., Illinois; C. Lewis Diehl, Kentucky; Dr. R. G. Eccles, New York; Dr. John Godfrey, U. S. M. H. Service; Dr. W. G. Gregory, New York; C. S. N. Hallberg, Illinois; John M. Maisch, Philadelphia; G. F. H. Markoe, Massachusetts; Dr. W. M. Mew, U. S. A.; Dr. Charles Mohr, Alabama; Oscar Oldberg, Illinois; Frank B. Pawer, Wisconsin; Dr. H. H. Rusby, New York; L. E. Sayre, Kansas; A. B. Taylor, Philadelphia; Dr. O. A. Wall, Missouri; Dr. H. C. Wood, Philadelphia; Dr. T. E. Wood, North Carolina.

Immediately upon the opening of the morning session on Thursday the Committee on Nomination made its report and the nominees were elected by the Convention by acclamation, the President and Secretary at once taking their places upon the platform. During the remaining portion of Thursday the time was occupied in the discussion of the thirteen recommendations made by the Committee appointed in 1880, with the result that they were all adopted with almost no changes or amendments, with the exception of three of them which dealt largely with the standardization of drugs and which were referred, after a considerable amount of discussion, to the Revision Committee, which had just been appointed; it being agreed that the entire question of standardization should be left to the judgment of this representative body. One section which dealt with the question of the use of "parts by weight" and the metric system, was laid upon the table and made the special order of business for Friday morning at 10 o'clock, and Professor Mendenhall, of the Coast Geodetic Survey, was requested to address the Convention in regard to the advisability of adopting the metric system in pharmacy. After appointing a committee of seven members to consider the manner in which delegates should be elected to the Convention of 1900 the Convention adjourned.

On Friday morning Professor Mendenhall delivered a very interesting address, partly historical in its character, dealing largely with the importance of the introduction of the metric system and its recognition as the standard of weights and measures by all learned bodies. The interesting statement was made that while certain States of the Union had passed exceedingly stringent laws for the punishment of adulteration, and for the purpose of preventing short weights and measures, they had not yet passed any law stating what the standard weights and measures are, which is rather an anomalous condition of affairs. After a discussion the Convention unanimously agreed to recommend the adoption of the metric system, and referred the question as to the use of parts by weight to the Committee of Revision. At the same time the meeting let it be distinctly understood that the preference of the Convention was for the older method, and favored the abolition of the method in vogue during the past ten years.

In view of the enormous amount of work which had been accomplished by the Committee of Revision of 1880, it was the universal desire of all the delegates that the members of that Committee should at least receive some small amount of money, which would be more in the way of an honorarium than a recompense. Unfortunately the amount of money in the treasury did not permit this; but it was moved, seconded, and unanimously carried by the Convention, that the incoming treasurer should be instructed to pay to the Chairman of the Committee of 1880 the sum of $1000, as an evidence of the recognition of his services. Dr. Rice generously refused to accept the gift, but his refusal was immediately voted down, and the Convention insisted upon his acceptance of the amount, which Dr. Rice immediately announced he would return to the treasurer as soon as it was received.

Two facts of great importance were also decided before adjournment. One was that the Committee should be instructed to publish and copyright the Pharmacopœia themselves, and to sell it at a nominal figure, only a sufficient profit being made to enable the Committee to carry out such scientific investigations as were thought desirable. Several times during the meeting a movement was started looking to the prevention of quotations from the United States Pharmacopœia by commentaries. This movement consisted in one instance in an absolute refusal to permit of such quotation, and in another of taxing the National and United States Dispensatories the sum of $5000 each for the privilege of quoting from the standard book. Both of these movements were defeated, and at no time were popular in their character, the Convention readily recognizing the fact that the Pharmacopœia is published not for the purpose of making money, but of affording a standard to which the medical and pharmaceutical professions may refer when they so desire. It is interesting to note that the number of copies of the revision of 1880 which have been sold during the past ten years amounts to over 17,000, the proceeds from which went toward the enriching of a publishing house rather than the furtherance of scientific research. In view of these facts it is evident that the instructions given to the Revision Committee in regard to publication by the Convention, which has just adjourned, are very much wiser than those of the Convention of 1880.

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WASHINGTON.

(From our Special Correspondent.)

Association of American Physicians and the American Surgical Association.

RAPIDLY following upon the adjournment of the convention for the revision of the Pharmacopœia which was held here last week, the Association of American Physicians and the American Surgical Association convened on Tuesday morning May 13th to discuss the papers prepared for their annual gatherings. On the first day the meetings of both associations were rather poorly attended, but upon Wednesday a very full attendance was present, and all through the entire meeting of both bodies the papers read may be considered as above the average, and the discussions resulting therefrom unusually to the point and valuable in their conclusions.

Both societies met in the Army Medical Museum, the physicians meeting in the library room, where sufficient space was provided and surrounded by large flags stretched upon screens, thereby excluding those who were not desirous of participating in the meeting, but who, nevertheless, wished to have access to the bookshelves. The surgeons, on the other hand, occupied a smaller hall on the floor above, which was large enough to suit their wants and sufficiently small to permit of each speaker being clearly heard, an advantage of which the physicians were deprived, unless the speakers made an effort to speak loudly and distinctly.

The session of the Association of Physicians began by the reading of the presidential address of Dr. Busey, of Washington, which dealt largely with the proposed changes in and amendments to the Constitution. Immediately after this, the various changes were taken up *seriatim*, and adopted or defeated as the Association thought best.

After the close of this business, Dr. Reeves, of Chattanooga, Tenn., read a paper of great interest on "Typhoid Fever,"[1] in which he dealt with the course of the disease in all its phases. The second paper of the morning was that of Dr. Norman Bridge, of Chicago, on "Appendicitis," while the third was the "Report of a Case of Varicose Aneurism of the Aorta and Superior Vena Cava." Dr. Lusk, of New York, contributed a paper on "Antisepsis During Labor," which was exceedingly interesting, and which your correspondent was able to obtain for the columns of THE MEDICAL NEWS, as well as the paper of Dr. Bridge already mentioned. The paper of Dr. Danforth, of Chicago, upon the "Diathetic Causes of Renal Inadequancy" was read by title, the author being unable to be present. The last paper which engaged the attention of this Association, on Tuesday, was one by Dr. Israel Dana, of Portland, Maine, upon "Seizures Characterized by Shock and Coma."

The meeting of the American Surgical Association was opened by the presidential address delivered by Dr. D. W. Yandall, of Louisville, upon the "Pioneers of Surgery in Kentucky." This was followed by a paper on the "Surgical Treatment of Tumors of the Bladder," by Dr. P. S. Conner, of Cincinnati, a full abstract of which was obtained from the author specially for THE MEDICAL NEWS.

Dr. Stephen Smith, of New York, then read a paper upon the "Treatment of Fractures of the Shaft of the Femur," and Dr. C. B. Nancrede, of Ann Arbor, closed the afternoon session by an exhibition of photographs and a presentation of the history of a rare form of epithelioma of the upper extremity.

The Wednesday morning session of the Association of Physicians began with an exceedingly interesting and learned paper upon "Disorders of Sleep," by Dr. S. Weir Mitchell, in which his large experience enabled him to make many interesting statements. This was followed by another, read by Dr. Charles F. Folsom, of Boston, upon the same subject—Dr. Folsom being placed on the programme with Dr. Mitchell as co-referee. After some discussion Dr. Charles L. Dana, of New York, read a paper upon a "Study of Sensory Disturbances in Hysteria," and was followed by Dr. Wharton Sinkler, of Philadelphia, with a paper upon "Recent Observations of the Etiology and Treatment of Megrim." Dr. Ward's paper upon "Angio-neurotic Œdema" was not read owing to the absence of its author.

Immediately after luncheon Dr. Harold Ernst, of Boston, made a demonstration of the result of the inoculation of rabbits with five or six drops of milk obtained from a cow afflicted with tuberculosis of the udder. Three out of four of the animals died within eight weeks of the inoculation, and the post-mortem showed the presence of miliary tuberculosis in all the abdominal organs. Dr. Ernst also made a report upon vaccination and the studies of Dr. Martin upon the isolation of the *contagium vivum* of cow-pox, a fuller account of which will be found in the proceedings of the Association, which will be published next week.

The remaining portion of the day was consumed by demonstrations on the part of Dr. Prentiss, of Washington; Dr. Fitz, of Boston; and Dr. Welch, of Baltimore. Dr. Prentiss showed a case of rheumatic purpura, and another of exceedingly slow pulse, while Dr. Fitz and Dr. Welch showed, respectively, microscopical preparations of a case of acute pancreatitis, and another of acute diphtheritic colitis with peri-pancreatic fat necrosis.

On Thursday Dr. Kinnicutt, of New York, and Dr. Shattuck read a paper on "Methods of Diagnosis in Diseases of the Stomach," and Dr. Shakespeare, of Philadelphia, one upon the "Prevention of Tuberculosis." After this Dr. Graham reported two cases of acromegaly. His paper was obtained for publication in THE MEDICAL NEWS.

The Wednesday morning session of the American Surgical Association opened with an address by Dr. Thomas G. Morton, of Philadelphia, upon "Surgical Operations for the Correction of Club-foot, with special reference to Tarsectomy or Excision of Bones." Interesting photographs of the result of surgical procedure were exhibited.

Dr. W. T. Bull, of New York, then read a paper "On the Radical Cure of Hernia," reporting results of over 100 operations.

Dr. Mastin, of Mobile, presented photographs of a case of lumbar hernia, giving an exhaustive *résumé* of the literature upon the subject in an essay entitled "Anomalies of Hernia."

The afternoon session was opened by a paper upon "The Propriety of the Removal of the Appendix Vermiformis During an Interval of Recurring Attacks of Appendicitis," by Dr. Frederick S. Dennis, of New York.

[1] This paper will shortly appear in THE MEDICAL NEWS.

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Dr. Theodore F. Prewitt, of St. Louis, was not present to read his article upon "A Successful Case of Splenectomy Complicated with Cyst of Pancreas."

Dr. Joseph Ransohoff, of Cincinnati, reported "A Case of Dural Hæmorrhage, with symptoms appearing one week after traumatism; Trephining; Secondary Hæmorrhage; Ligation of Common Carotid; Pyæmia; Secondary Bleeding from Carotid; Death."

The Nominating Committee then presented their report, which was unanimously adopted, the following officers being elected for the ensuing year:

President—Dr. C. H. Mastin, Mobile, Ala.

First Vice-President—Dr. John Collins Warren, Boston.

Second Vice-President—Dr. Stephen Smith, New York.

Secretary—Dr. John R. Weist, Richmond, Ind.

Treasurer—Dr. Phineas S. Conner, Cincinnati.

Recorder—Dr. J. Ewing Mears, Philadelphia.

Council—Dr. Stephen H. Weeks, Portland.

Committee of Arrangements—Dr. John S. Billings, U. S. Army.

"A WOLF IN SHEEP'S CLOTHING."

To the Editor of THE MEDICAL NEWS,

SIR: The following circular came to me in my mail a day or two ago. It seems to me to be a positive insult to the medical profession for these people thus to undertake not only to set them aside, but to solicit their aid in so doing, and you may, perhaps, think it worth while to notice the matter again, for, on a previous occasion, it was dealt with in one of your editorials.

Very respectfully yours,

JOHN H. PACKARD, M.D.

May 3, 1890.

PHILADELPHIA, April 30, 1890.

DR. J. H. PACKARD: We presume you are frequently called upon to require your patients to have an ophthalmic examination.

Fully appreciating the responsibility you are under in referring such patients, both because of the professional skill required, as well as the expense and loss of time to which you are obliged to put your patient, we have endeavored to meet such needs in a thoroughly practical and business-like manner.

We have permanently engaged the services of a number of registered physicians who in addition are ophthalmologists. That we have engaged them for this work is, we hope, a sufficient guarantee to you of their fitness for such a position. We find that all but ten per cent. of persons requiring glasses may be satisfactorily fitted *without* either the use of mydriatics or an examination with the ophthalmoscope. For such cases we charge only for the glasses furnished. When, however, the result of the preliminary examination shows that a more accurate and lengthy analysis must be made, one of our oculists is given charge of the case and the proper formula for the glasses prepared. Of course, any affection which requires other remedy than that of glasses, will be properly cared for. Our charge for such services is ten dollars. You will, we think, at once see that the wants of your patients will be well served if you refer them to us, because: 1st. They will, in most instances, obtain their glasses in *one visit*. 2d. They are not obliged to visit a physician's office in one part of the city, and an optician in another—examination, formula and glasses being all obtained at our office. 3d. As everything in connection with the measurement for the furnishing of glasses is done under our direction, we are able to hold ourselves responsible for a result satisfactory to the patient and yourself, and are ready, in case the glasses are not entirely satisfactory, to take them back and refund the money paid for both examination and glasses. 4th. The cost of the entire transaction is most reasonable, without even considering the saving in time. We, therefore, hope that we may have your esteemed patronage for such work.

Yours truly,

QUEEN & Co.

NEWS ITEMS.

Tulane University, New Orleans.—It has been announced that Dr. Sterling D. Kennedy has resigned the position of Lecturer on Diseases of the Eye and Ear in the Tulane University, and that Dr. W. C. Ayres has been elected to fill the position. Dr. J. D. Bloom, assistant house surgeon of the Charity Hospital, has been elected Lecturer on Diseases of Children, and Dr. John H. Bemiss Lecturer on Clinical Medicine.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 6 TO MAY 12, 1890.

By direction of the Secretary of War, HENRY JOHNSON, *Captain and Medical Storekeeper*, now on duty at the Medical Purveying Depot, New York City, will take charge of that Depot, and perform the duties of Edward P. Vollum, Colonel, Surgeon and Acting Assistant Medical Purveyor, during the absence of the latter.—Par. 11, *S. O. 109, A. G. O., Washington, D. C.*, May 9, 1890.

By direction of the Secretary of War, leave of absence for two months, to take effect June 1, 1890, with permission to go beyond the sea, is granted EDWARD P. VOLLUM, *Colonel, Surgeon, and Acting Assistant Medical Purveyor*.—Par. 10, *S. O. 109, A. G. O., Washington, D. C.*, May 9, 1890.

By direction of the Secretary of War, the following named officers are detailed as Delegates to represent the Medical Department of the Army at the annual meeting of the American Medical Association, to be held at Nashville, Tennessee, May 20, 1890: JEDIDIAH H. BAXTER, *Colonel and Chief Medical Purveyor*; ALFRED A. WOODHULL, *Major and Surgeon*. The officers named will proceed to Nashville at such time as will enable them to reach there on or before May 20th.—Par. 4, *S. O. 107, A. G. O., Washington, D. C.*, May 7, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING MAY 10, 1890.

GREEN, E H., *Passsed Assistant Surgeon*.—Ordered to the Receiving-ship "Dale," Washington Navy Yard.

WHITING, ROBERT, *Passed Assistant Surgeon*.—Detached from the "Dale," and ordered to the Nautical School-ship "St. Mary's."

WHITAKER, H. W., *Passed Assistant Surgeon*.—Detached from the "St. Mary's," and resigned, to take effect November 5, 1890.

ROSS, J. W., *Surgeon*.—Ordered to the Navy Yard, Pensacola, Florida.

FLINT, J. M., *Surgeon*.—Appointed a Delegate to represent the Medical Department of the Navy at the Pharmacopœia Convention to be held in Washington, May 7th.

DEAN, R. C., *Medical Inspector*.—Appointed a Delegate to the American Medical Association Convention, to be held at Nashville, Tennessee, May 20, 1890.

WOOLVERTON, T., *Medical Inspector*.—Appointed a Delegate to the American Medical Association Convention, to be held at Nashville, Tennessee, May 20, 1890.

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THE MEDICAL NEWS.
A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVI. SATURDAY, MAY 24, 1890. NO. 21.

ORIGINAL ARTICLES.

INFLAMMATIONS OF THE APPENDIX AND CÆCUM, AND THE DUTY OF THE PHYSICIAN REGARDING THEM.[1]

BY NORMAN BRIDGE, A.M., M.D.,
PROFESSOR OF CLINICAL MEDICINE AND PHYSICAL DIAGNOSIS IN RUSH MEDICAL COLLEGE, CHICAGO.

To anyone who reads the recent literature of this subject it will be apparent that it has received its chief study of late, not at the hands of general medical practitioners, who have the greatest opportunities for observing cases of these inflammations, but at the hands of surgeons, men who make surgery a specialty, and who see few cases in their incipiency of inflammation of the abdominal organs. The character and effects of these inflammations have been revealed to a large degree by post-mortem examinations, but it was left for modern surgery with its antiseptic methods to illuminate the subject of the treatment of many of their results as well as their character and tendencies. In proportion to the number of cases falling under the observation and management of surgeons the results in many ways have been profitable and encouraging. The surgeons have reached certain conclusions as to the character of these inflammations and what ought to be done for them, some of which are rather sweeping, and which encounter doubt and opposition on the part of many practitioners who give little or no attention to surgery. If the results attained by surgery were put with the observations of large numbers of cases never requiring surgical interference, and which are never seen by workers in the field of surgery, we should have the safest guide for diagnosis and treatment.

It is certain that these diseases are frequently not recognized and are often mistreated, and that the notions of doctors generally regarding them need to be radically revised. An obstacle to the exact understanding of the whole subject is the reluctance practitioners manifest to reporting their unfortunate results and bad diagnoses.

One prevalent misconception regarding these inflammations is of their actual and relative frequency. Primary inflammation of the cæcum is rare, while that of the appendix is very common. Of all organs of the abdomen in males the appendix is most prone to dangerous inflammation. In females this tendency is exceeded by the pelvic organs only. Of 300 autopsies at random Toft reports that 36 per cent. revealed evidence of disease of the appendix. Such evidence doubtless consisted of adhesions of the organ to adjacent parts, and of various changes in its structure and condition which can be caused only by inflammation of some degree or character. Often these appearances are found in cases not known to have ever had abdominal inflammation. Four-fifths of all cases collected by Fitz were in males, showing a marked predisposition difficult to explain. While of all cases of appendicitis without extension only 20 per cent. were in females, 26 per cent. of cases of perityphlitis were in that sex. This does not prove, perhaps, that women are more prone to perityphlitis from inflammation of the appendix than men, but the increased percentage may be explained by the possibly greater tendency in them to pure cæcitis from foreign bodies—aggravated by constipation—since irritation within the cæcum sometimes leads to perforation and perityphlitis.

Dr. Ludvig Hektoen, of Chicago, a careful observer, has noted the condition of the appendix in 280 post-mortem examinations, and found that in 42 cases (15 per cent.) there were evidences, in adhesions or otherwise, of previous peri-appendicitis from which the patient had recovered. Cases of existing inflammation were not counted. So in Chicago, among people who find their way into the County Hospital, fifteen in every hundred have had inflammation of the peritoneal surface of the appendix or the connective tissues posterior to it or both, and have recovered. These figures are not inconsistent with the records of Toft, since he observed all diseases of the appendix both inside and out, while Hektoen only recorded cases showing inflammation of the outside of the appendix, and which had recovered.

While primary inflammation of the cæcum is unusual, its secondary involvement from appendicitis and resulting perityphlitis or circumscribed peritonitis is doubtless common.

It must be extremely unusual for the cæcum to be primarily attacked, except when irritated by foreign bodies from within. Even in such cases it is rare for perforation to occur, this process usually beginning from without, when a perityphlitic abscess opens into the cæcum.

[1] Read before the Association of American Physicians, May 13, 1890.

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The vast majority of cases of so-called typhlitis and perityphlitis begin as appendicitis; the tissues of and about the cæcum become inflamed secondarily and usually as a result of perforation of the appendix. These two pathological conditions are often confounded; probably in most instances perityphlitis is the term to use. It is not the inflammation of the cæcum that is usually a menace to life, but that of the cellular tissue and peritoneum which so often leads to induration and to abscess with its manifold dangers of spontaneous opening in perilous directions.

Probably failure of free evacuation of the appendix is the first step in the causation of its commonest inflammation. The moment its contents are unduly retained harmful decomposition begins, deposits of lime salts occur upon retained fæcal matter, if such is present, and enteroliths are formed which press too hard on the swollen and tense mucous membrane, which finally yields in the weakest spot, and an ulcer is present. Only occasionally are similar consequences produced by foreign bodies in the appendix. In a considerable proportion of cases the ulcer occurs without the irritation of a hard body of any kind. The ulcer deepens by a persistence of its causes till it touches the internal surface of the covering peritoneum, or the cellular tissue if within the mesentery; then trifling peritonitis or cellulitis or both occur, ending in a few days if the causative process stops. If, however, the ulcer deepens it perforates the appendix, a particle of its contents is extruded, when peritonitis or perityphlitis promptly ensues. In some instances the peritonitis is sharply localized and plastic exudation bars the irritating material from the general peritoneal cavity, and intraperitoneal abscess forms; in others a general peritonitis occurs, and usually death in a few days.

If the perforation is within the mesentery a cellular inflammation results, and we have the common perityphlitis—usually not wholly independent of more or less peritonitis—and in a large proportion of cases such induration as may be easily demonstrated, and within this pus.

Most cases in males of so-called "inflammation of the bowels" are simply instances of inflammation of the appendix or cæcum, with or without the involvement of the connective tissue about them, or the peritoneum, or both. It is equally true that most cases of peritonitis in men and boys, and not a few in females also, are due solely to perforation and infection consecutive to these diseases. Until discovered after death this cause is generally not suspected. I venture the assertion that most autopsies after peritonitis in the male sex reveal this etiology—and sections are made in only a meagre minority of such cases.

A case in point came under my observation in consultation about two years ago:

Mr. S., a large, robust man, forty-five years of age, had enjoyed apparent perfect health for many years. After attending a banquet he stood for half an hour, dressed in thin clothes and without an overcoat, in a cold and windy doorway waiting for his carriage. The next day he felt uncomfortable; later, had some pain and slight tenderness in the abdomen; the next day, fever and some vomiting. A consultation a day or two later discovered simply the evidences of mild general peritonitis; there was neither much fever, pain, tenderness, nor prostration, and the tenderness was localized in the lower zone of the abdomen, and to the same degree on either side. There was moderate tympanites, but no dulness on percussion. He was somewhat under the influence of opiates. He continued in much the same condition for nearly a week, when the symptoms suddenly became worse, collapse soon appeared, and death in a few hours. The autopsy revealed a fresh general peritonitis, a peritonitis of longer standing localized about the appendix, the intestines glued together by thick plastic deposits, a pocket of pus, with fæcal matter, by the side of the appendix, and the latter perforated at its junction with the cæcum. The steps in the case were appendicitis, ulceration, perforation, extrusion of fæcal particles, localized peritonitis and abscess, extension of the poison and the process to the general peritoneal cavity, general peritonitis and death.

Many cases of supposed intestinal obstruction, such as intussusception and volvulus, with some evidence of inflammation, are instances of peritonitis from perforation of the appendix, or of abscess due to previous inflammation of the appendix and its results. The fallacious theory that is often held is that an obstruction has occurred, which in a few hours has developed inflammation.

A case in my own hospital service well illustrates this error:

A youth of less than twenty years walked into the hospital from a cab at the curbstone, complaining of pain in the abdomen. He said he had been sick for several days with this pain to such a degree that he could not lie down, but must sit in bed bent forward. His friends said it had been impossible at times to keep him in bed, his suffering was so great. The sickness had, it was declared, come on suddenly, and he had repeatedly vomited. After his arrival he vomited yellowish fluid having a stercoraceous odor. He had considerable fever, a pulse of 130, a tense abdomen, and a look of desperate sickness. A consultation with my surgical colleague, Dr. Graham, resulted in the conclusion that the case was probably one of obstruction followed by peritonitis. Certain to die speedily without surgical relief, he was given the chance of laparotomy. Nothing but peritonitis was discovered. This was afterward found to have resulted from a perforation of the appendix.

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It is probable that abscess rarely occurs until after perforation, which may be regarded as the direct cause of it. Inflammation of small surfaces of the peritoneum with adhesions, however, often supervene, as well as probably some degree of cellular inflammation, without perforation.

The mortality from appendicitis, considering the frequency of the disease, cannot be regarded as great. The mortality from those cases eventuating in perforation of the appendix, however, is great, since this is the condition that leads to induration and extraperitoneal abscess, and to acute severe local peritonitis and intraperitoneal abscess, or to general peritonitis. The general peritonitis means almost sure death, and the abscess, wherever it is and however well it may appear to be surrounded by protecting plastic deposits, is a constant menace to life, as abundantly shown by its spontaneous opening into the abdominal cavity, the venous canals, the bladder, and the chest cavity, as well as externally and into the intestinal canal.

In view of these considerations it is of the highest moment that we should be able, if possible, to distinguish the mild from the grave cases. One-fourth at least of all post-mortems show recoveries from previously existing inflammation, or other diseases of the appendix, and probably 15 per cent. show recoveries from peri-appendicitis. The duty and aim of the doctor must be to determine clinically, if possible, the cases that form this vast class and commit them strictly to medical treatment, while he insists on surgery for those that lead to death directly, or to the hazardous results of abscess. Can this determination be made with certainty?

The diagnosis of perityphlitis is usually easy. Localized pain, sometimes masked early by pain elsewhere, often in the epigastrium, and by vomiting; more especially, localized tenderness; soon some evidence, both by palpation and percussion, of tumefaction in the cæcal region; possibly pain in this region on flexing the thigh, and with some fever —all perhaps following or attending diarrhœa—are ordinarily sufficient. Percussion dulness is often present over the tumor, though tympanites sometimes masks it completely, but palpation discovers an induration even of small size if it is done carefully and in comparison with the opposite side. The diagnosis of acute appendicitis before the advent of perityphlitis is more difficult, from the absence of any tumor and the deep location in the abdomen of the tenderness. The appendix sometimes hangs down into the true pelvis and far from the anterior wall of the abdomen. An appendicitis may be ushered in by vomiting and pain in the epigastrium, which may evoke such complaint as to mask the pain in the cæcal region. In only a little over one-half of all cases of acute inflammation in the cæcal region is the pain mostly in that locality, while in nearly one-third the pain is attributed to the abdomen generally.[1] Sometimes there is a misleading sensation of induration to touch due to the tension of the abdominal muscles over the tender point, a condition that wholly disappears under anæsthesia. For purposes of diagnosis the hypodermic needle is permissible only when it is absolutely certain that it may be passed into the centre of the induration without entering the general peritoneal cavity. It is unsafe to use it in a supposed intraperitoneal abscess. The absence of fluctuation over an induration is no proof of the absence of pus; pus is present in all large and in most small indurations of a few days' standing. In a few cases (it must be very few) digital exploration of the rectum will discover indurated tissue below the cæcal region.

A large proportion of first attacks, and probably many subsequent attacks, of acute appendicitis will doubtless recover without abscess, and with slight cellulitis or local peritonitis and adhesions, under proper treatment; namely, quiescence in bed, hot applications, anodynes, light diet, and a rigid avoidance of all influences that can provoke general intestinal peristalsis. It can hardly be questioned that a majority of such cases recover even without these wholesomely safe measures of treatment and hygiene. Many cases of chronic appendicitis utterly fail to improve much under any treatment, albeit treatment doubtless often prevents such from passing on to ulceration.

When to go beyond medical treatment of these diseases and insist on operation probably cannot be determined by any absolute rule. Each case must be dealt with by itself to some degree, since cases differ widely; but there are certain general principles that ought to guide us, in view of which we cannot shirk our full responsibility.

Reliance on medical treatment is justifiable in acute inflammation in the cæcal region (*i. e.*, appendicitis, perityphlitis, or typhlitis) of moderate severity, in the absence of strong evidence of perforation, abscess, peritonitis, or marked tender induration lasting two or three days without some sign of decrease, and of high temperature either continuous or recurring, rapid weak pulse, or rapid anxious respiration. But we can never know when a catastrophe is to occur, even in an apparently mild case such as is here characterized. A few cases falling in this category will suffer sudden perforation, general peritonitis, and death; but nearly all of them, failing of prompt recovery, will, if perforation occurs, have sharply localized peritonitis or perityphlitis, and probably abscess that will be easily discovered, and will demand surgical treatment. That, in a

[1] Fitz.

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high percentage of a large number of post-mortem examinations made on all sorts of cases, there should have been found evidence of previous, recovered appendicitis would seem to justify the position here taken.

Reliance on medical treatment is also justifiable in subacute and chronic inflammation where the constitutional symptoms are mild, pain and tenderness slight, and the induration small and not increasing. Such cases frequently suffer occasional slight exacerbations of short duration, which do not positively indicate the need of an operation, unless each recurrence increases the size of the tumor or its sensitiveness to pressure, or develops other proof that it is an abscess. To say that every perceptible induration at the site of the cæcum should receive the ministrations of surgery is not justifiable; and probably numerous cases might be reported of operation on small indurations without discovering pus. One such is here presented:

Mr. A. B. entered my hospital service complaining of slight pain and tenderness in the right iliac region, and giving a history of several attacks of acute inflammation within a year. In each attack there was moderate fever, and in the beginning frequent diarrhœa. A small induration over the lower part of the cæcum was distinctly made out; it was slightly tender to pressure, and forward movement of the right thigh was embarrassed. This case was transferred to my surgical colleague, Dr. Parkes, in the belief that an operation should be made. He performed laparotomy, and found some thickened omentum, numerous adhesions, some of which he separated, but neither abscess nor appendicitis. The wound healed promptly.

The two outlines given above include the vast majority of all cases, and if the premises are correct, then these cases are most properly committed to strictly medical treatment, and the only proper treatment is the conservative course already described.

But surgical interference is demanded in certain cases of inflammation in the region under consideration, whether they happen to be called typhlitis, appendicitis, perityphlitis, or by some other name, and the weight of first responsibility is on the physician more than the surgeon.

1. Surgery is imperative in cases of acute inflammation in the cæcal region, with rather protracted high temperature, and with distinct induration, sensitive to pressure, that does not show positive evidence of subsidence within two days, or three or four days from the beginning. This rule becomes more urgent if the induration continues to increase in size and sensitiveness after two days, or if symptoms of general peritonitis occur, or rapid, weak pulse, or rapid respiration. The vast majority of such cases if left to themselves eventuate in abscess in less than a week, and many before that time lead to mortal peritonitis. Some require operation in less than two days from the beginning of the attack, and most of them have perforation of the appendix as early as the beginning of the symptoms.

I am aware that a few cases here characterized do not require operation and would recover without it, but the number is so small compared to those in the greatest peril to which it is a crime not to offer the benefit of surgery, and the danger of an antiseptic operation is so slight, that they constitute no impeachment of the rule.

2. Operation is required in cases of undoubted severe acute inflammation in the region of the appendix, even though no particular induration is demonstrable, and in cases of acute localized peritonitis having its origin certainly at the appendix, and causing marked constitutional symptoms. In the one situation there is almost certainly such violent inflammation of the appendix as seriously to threaten perforation, with all its dire possibilities; in the other, perforation has occurred and an abscess is probably forming. In the one case there should be laparotomy and extirpation of the appendix; in the other, laparotomy, extirpation of the appendix, if possible, and treatment of the abscess. Probably these two classes cannot be distinguished from each other; many of the symptoms of the one belong to the other. Practically, it is hardly important that they should be distinguished, as both abundantly justify surgical interference; the patients are in vastly less jeopardy with the operation, when carefully made, than without it.

3. Surgery is especially promptly required in that small class of acute cases in which a large, sensitive induration develops rapidly, with high fever and general evidence of severe constitutional disturbance. Here extensive deposit and large abscess are almost certain to be present, and the danger of early rupture into the peritoneal cavity is considerable, hence the necessity of prompt action.

4. Surgical aid is demanded in all cases which have advanced to the subacute or chronic stage with distinct induration of considerable size, or with any induration that steadily increases in size for many days, since in most such cases pus is present. These are the cases where sometimes weeks and months after the acute stage a tumor of variable size is found in the iliac region, slightly tender, dull on percussion, and attended by a slight stiffness in walking dependent on pain in flexing the right thigh. Usually in such cases there are frequent exacerbations of moderate suffering in the affected region, often with slight fever, and disabling the patient for a day or two. Unless the tumor is very small pus is almost invariably found in its midst, the quantity varying from a few drachms to many

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ounces. The patient cannot be safe so long as an abscess is present in the neighborhood of the cæcum, but the danger is in proportion to the size of the abscess. Some portion of the cæcum must generally form a part of the abscess wall, hence the liability of rupture into this canal and into the peritoneal cavity. In a case seen by the writer in consultation with Dr. J. B. Murphy, a perityphlitic abscess had undoubtedly existed for a year, since the date of a previous illness in which there were dull pain and fever for several weeks. The abscess ruptured into the abdominal cavity while the patient was scrubbing a floor; peritonitis rapidly supervened; a circumscribed large peritoneal abscess formed, which was opened by Dr. Murphy, and a quart of pus evacuated. This case also exemplifies the large induration developing rapidly already referred to. The apparently small difference between cases sure to die without operation and those likely to recover without it, as well as the difficulty in finding the line of duty in management, is shown in the two cases that follow:

D. F. G., aged fourteen years, robust and active, went hunting on April 30, 1881, and became very tired. The whole of the next day he felt fatigued.

May 2. Felt a little better, but had a mild diarrhœa; next day more diarrhœa, pain, and slight tenderness on pressure in the cæcal region.

4th. I was called and found the diarrhœa better, but still some pain and tenderness at the point mentioned; pulse was 100, and temperature 101° F.

5th. Patient was improved; slight tumefaction in the cæcal region; pulse 100, temperature 101.7° F.

6th. No pain; tenderness less; pulse 100, temperature 99° F.

7th. Temperature 99° F. There had been no increase in respiration rate, and the patient felt convalescent. The next day at 11 P. M. a piercing pain was felt in the lower abdomen, at the right side, lasting only a few minutes. Some tenderness was found soon afterward, but no tympanites; the pulse was 100 and small, temperature 98.5° F.; respiration 20. Collapse came on in six hours, pulse was 150, temperature 98.5° F., and death in four hours more. It was found, post-mortem, that perforation of the appendix had led to an intraperitoneal abscess containing an ounce of pus; that the plastic wall of this abscess had given way at its superior point, a fulminating general peritonitis being instantly lighted up. The rupture was at the distal end of the appendix, which was gangrenous.

G. B., aged thirty, salesman, strong and active, had had occasional attacks of pain in the abdomen lasting for a few hours. He was seized last February, in the morning, with severe pain in the lower abdomen, and went home and to bed. By evening his temperature was 104.5° F.; then he discovered that the pain, which had continued to some degree all through the day, was most intense in the right iliac region. His bowels were moved by an enema. I saw him first at this time and found tumefaction and dulness in the cæcal region with the slightest possible tenderness; next day, and the day after, the evidence of tumor was greater than at this time, the tenderness being reduced. The second day of attendance the temperature was over 103° F., the third day 102°, and the day following 99°, from which time convalescence was rapid, and he was out in a week from the onset. The pulse was at no time much above 100, and the respiration was not accelerated; there was no diarrhœa and the patient was tranquil in mind.

It will be seen that the temperature rapidly fell after the third day of the sickness; with its fall the evidence of tumor rapidly disappeared. In this case tumefaction and dulness on percussion were marked in the cæcal region, and entirely disappeared with recovery and there was never any notable tenderness. In the case of D. F. G. clinical evidence of tumor was slight, but during the first week there was constantly more or less tenderness, a symptom we now know as some indication for surgical relief.

5. Surgery is justifiable in all cases of undoubted chronic appendicitis with occasional exacerbations even if no induration is present. In all such cases we cannot doubt that the patient is in constant danger of perforation of the appendix, and mortal peritonitis or perityphlitis—a danger greater than that involved in an antiseptically done laparotomy and extirpation of the little organ entire.

If the diagnosis was positive in every case there could be no objection to this proposition, for it covers only cases with some persistent cause of the inflammation, and not those with a temporary cause, and a single seizure with no special tendency to a recurrence. The persistent cause is usually something within the appendix that makes pressure and irritation, and back of that some constriction of the appendicular opening or some fault of its valve; the cases of one mild attack and quiescence afterward are those in which there is no incarceration of irritating matter of any sort, and where the exit from the canal is free.

Fitz says catarrhal appendicitis is probably not recognizable. The diagnosis of such cases is beset with difficulties and probably many of them cannot be diagnosed, but some may be, and these should not fail to receive the benefit of surgery simply because they may not appear for the moment to be formidable. The diagnosis must often be made by exclusion and is easier in males than females, since in the latter the pelvic organs are apt to produce symptoms resembling those of appendicitis. The following case is illustrative:

A lady of twenty-eight years, vigorous and robust, had experienced from time to time since girlhood slight pain in the right groin and thigh, often aggravated by exercise. Occasionally there was accom-

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panying but less pain in the left groin and thigh. Last summer she had what appeared to be a dysenteric attack, passed bloody stools, had much pain in the abdomen, especially on the right side, and fever. She recovered and resumed her active life, which required her to be much upon her feet. Soon pain in the abdomen recurred, then came slight fever, anorexia, occasional vomiting and constipation, tenderness over the hypogastrium and pain in the thighs. At the end of six weeks she entered my hospital service and was carefully examined, my gynecological colleague, Dr. Merriman, assisting. Then she was in bed, unable to move without pain in the abdomen, and suffering considerably in the thighs, hypogastrium, and right inguinal region. The abdomen was tender over its right side, from the border of the ribs to Poupart's ligament, but no tumefaction or dulness was discoverable. An examination of the pelvic organs revealed nothing pathological, nor could any induration be felt through the vagina or rectum. She had a daily rise of temperature to 100° or 101° F. The thighs were kept flexed much of the time, and pain in the psoas region occurred on flexing the right thigh against resistance; a daily enema was required; the appetite was poor, and the sleep much disturbed by pain. She soon began to improve, and in a month or six weeks could turn in bed with only slight discomfort; her appetite was better, the pain less, and the temperature much of the time normal. The tenderness in the abdomen, however, persisted and became more marked over the cæcal region; and one or two tentative efforts at sitting up were followed by rise of temperature and return of pain lasting two days or more. It now seemed that the history and course of the case had excluded every other pathological condition but some chronic inflammation at the location of the cæcum and appendix, and that the time for surgical exploration had arrived, and my colleagues, Drs. Parkes and Merriman, examined her at my request and agreed that an operation was justifiable. Laparotomy was made by Dr. Parkes, and the appendix was found enlarged in its diameter, hard and tense, projecting forward in an erect position, and deeply congested. No other pathological condition was discovered in the abdomen. The appendix was extirpated and found to contain three small enteroliths, and a quantity of thick, tenacious mucus; its walls were thickened. On laying it open longitudinally it assumed instantly a rolled form in the reverse direction—apparently the peritoneum contracted and the thickened mucous membrane and muscular tissue became extended. The patient made a good recovery from the operation and her symptoms have disappeared.

There was in this case no evidence of beginning ulceration of the appendix, and so no immediate danger of a perforation, but the tension of the organ was so great as to prove the existence of an almost complete closure of its opening, and must have led to ulceration sooner or later. Moreover, the patient apparently would have been a permanent invalid without the operation.

THE IDEAL OPERATION FOR CATARACT.[1]

BY W. C. PIPINO, M.D.,
OF DES MOINES, IOWA.

AFTER holding sway for nearly thirty years it now seems probable that Gräfe's operation for cataract is to be supplanted by one performed nearly a century and a half ago—a "survival of the fittest" it would seem. After all these years of faithful trial by the most expert and skilled ophthalmologists of the various methods and modifications that have been introduced for the extraction of cataract, we are about to return and give preference to the simple flap extraction.

History informs us that it was Daviel, a French surgeon of Marseilles, who performed the first operation for cataract extraction in the year 1747, by making a long corneal section, using a lance for puncturing, a two-edged knife for enlarging the puncture, and scissors for finishing the flap. We are informed that the first modifications made by his successors were in the instruments used; the knife of Richter appearing in 1773, twenty-six years later. In 1813 Beer's triangular knife was introduced. The next step in the line of improvement was to bring the base of the flap nearer the horizontal diameter. In 1862 Thoreau performed iridectomy with flap extraction. In 1865 von Gräfe introduced what is known as Gräfe's peripheral linear extraction. This is the operation that has held undisputed possession or preference in the hands of the majority of operators until quite recently, when its superiority began to be questioned. At present there is a strong tendency to return to the original flap operation, and indeed there are good and sufficient reasons, as I will endeavor to show. One would naturally come to the conclusion that better vision would be secured from a round movable pupil, than from an irregular one. And such is the fact. The coloboma caused by the mutilation of the iris has always been an annoyance to the fastidious operator, the unnatural and enlarged pupil causing more or less loss of acuity of vision; moreover, the unsightliness is a constant reminder of the surgeon's knife.

Schweigger, of Berlin, says that one of the interesting changes in the ophthalmology of the present day is the return to the old method of cataract operation. The restoration of sight with the preservation of a round and movable pupil is undoubtedly one of the greatest operative achievements. How was it possible that we could have renounced the attainment of this ideal from the beginning?

In order to answer this question we must go back thirty years. Ophthalmology at that time was

[1] Read before the Iowa State Medical Society, April 16th, at Des Moines.

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dominated by the overpowering impression of the cure of glaucoma by iridectomy, which, of course, was just as inexplicable then as it is now; then somebody or other invented the magic word "antiphlogistic" iridectomy, and that operation became the cure, not only for existing but also for anticipated inflammation. Since then reason is being restored, and the time is not far distant when iridectomy will be performed in complicated cases only. In a recent article on the subject Dr. Ayres says:

"To extract the lens and preserve the shape, size, and activity of the pupil, and at the same time improve the vision, must certainly be the aim of the operator and must constitute the ideal operation."

Thus it is seen that this movement is bound to command attention here, as it is engaging the minds of some of the most eminent ophthalmologists both in Europe and America. The question naturally suggests itself, If the simple extraction is the best operation, why was it ever discarded? To answer this question properly requires much time and reading. I offer the suggestion, however, might it not be due to our increased knowledge obtained from the experience of our most eminent ophthalmologists, who are becoming more expert operators as their experience increases? Or might it not be due to the fact that we look to men of great opportunities for guidance, and, sheep-like, follow in their tracks? Again, the dangers of iritis, prolapse, and imperfect coaptation of the flap, I think, are greatly exaggerated. It cannot be denied that the advances made in antiseptic measures have diminished the danger of these operations as of others. I am a firm believer that the less we disturb the iris (as by iridectomy), the less is the risk of iritis. I have yet to see the escape of the vitreous in the simple extraction, which is more than I can say for the linear extraction with iridectomy, and I have had some experience in both. To remove a lens successfully without iridectomy and thus obtain a round movable pupil is the final purpose which every conscientious ophthalmologist hopes to attain. It must be remembered that simple extraction is not possible in all cases. There are complications where the Gräfe extraction would do better.

Dr. Knapp, whom we all recognize as in the front rank, says:

"If I review my cases the opinion is forced upon me that the simple extraction is not only the best but the safest method of removing cataract. The iris, spread out as a *velum interpositum* between the corneal section and ciliary body, protects this, the most susceptible part of the eye, from the deleterious substances that may enter through the wound."

He gives a record of 1000 cases operated upon by him, the first eight hundred by the linear or Gräfe operation, and the last two hundred by the simple extraction. In the first three hundred he had 91 per cent. of good results, 3 per cent. of imperfect results, and 6 per cent. of loss.

In the fourth and fifth hundred 82 per cent. of good results, 6.5 per cent. of moderate results, and 11.5 per cent. of total loss.

In the sixth hundred 89 per cent. of good results, 1 per cent. of moderate results, and 10 per cent. total loss.

In the seventh hundred 88 per cent. good results, 7 per cent. moderate results, and 5 per cent. total loss.

In the eighth hundred 90 per cent. good results, 8 per cent. moderate results, and 2 per cent. total loss.

The ninth hundred cases were operated upon by the flap method without iridectomy, and the good results are apparent at a glance. Of these there were 96 per cent. of good results, 3 per cent. moderate results, and 1 per cent. total loss, while in the last hundred cases, operated upon by the same method, the results are still better, 97 per cent. good results, 2 per cent. moderate results, and 1 per cent. total loss.

These results speak for themselves, especially when we remember how rare it is to obtain vision of $\frac{20}{20}$, after Gräfe's method, and how frequently vision of $\frac{20}{20}$ is obtained after simple extraction without iridectomy, showing without a doubt the superiority of the one over the other.

De Wecker, Panas, Galezowski, Schweigger, and others claim equally good results. During the last winter I have operated upon eleven cases by the flap extraction without iridectomy. The results obtained are sufficiently encouraging to warrant a continuance of the method.

CASE I.—Mr. E., aged seventy-four; senile cataract in both eyes; unable to distinguish fingers. Both eyes were operated upon at the same sitting. Operation satisfactory. Perfect recovery, with round, movable pupil; with + 11 D vision $\frac{20}{20}$. Has since written me letters expressing his gratitude in once more being able to shoot squirrels.

CASE II.—E. H., aged thirty-four; semi-hard cataract in both eyes. Cannot count fingers with right eye, but can with left. Right eye operated upon without iridectomy. Operation was smooth and quick; spontaneous reduction of iris; pupil round and movable. Six weeks after operation with + 11 D sph. ⊖ + 1 D cyl. 110°, vision = $\frac{20}{30}$.

CASE III.—W. H, aged sixty-four; senile cataract of both eyes. Unable to count fingers. Left eye operated upon; flap extraction; round movable pupil; with + 10 D vision = $\frac{20}{20}$.

CASE IV.—Mrs. J., aged sixty-nine; senile cataract; both eyes operated upon by flap extraction, without iridectomy. Corneal incisions smooth, and pupils black. Immediately after operation could count fingers; recovery uninterrupted, with + 11 D vision = $\frac{20}{20}$.

CASE V.—P. E., aged thirty; zonular cataract in

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both eyes; flap extraction under cocaine; pupil round and black. Second day after operation plaster was removed, and the anterior chamber was found to contain pus; corneal wound united. Eye was kept bathed with a solution of bichloride, 1 to 4000, and a few drops of the same were instilled between the lids every third hour. In three days the pus was absorbed and cornea clear. At present with + 11 D ⌒ + 1 D ⌒ 90°, vision = $\frac{20}{25}$.

To economize time, and a useless repetition of reporting the other cases, I will simply state that nothing occurred during the after-treatment worthy of mention, and the results were good.

It will be noticed, however, in the case last reported, had the plaster not been removed and the eye inspected there is no doubt that the eye would have been lost, the timely application of the bichloride preventing the destructive process. Had the old plan of dark room, eye bandage, and let-alone treatment been practised, the patient would now be mourning the loss of an eye. In marked contrast to the cases just reported as having been operated upon, and to the good results obtained, I will mention the case of an old gentleman upon whom the modified linear operation was performed on account of posterior synechia. It would have been impossible to remove the lens by the flap operation, so iridectomy was made. Six weeks after the operation, in trying to correct the aphakial condition with lenses, he was found to have an astigmatism of 4 D, so with a + 11 D sph. ⌒ + 4 D cyl. 180° his vision was brought up to $\frac{20}{40}$. In connection with this I might here remark that I have met less astigmatism after the flap extraction without iridectomy than after the peripheral extraction with iridectomy.

A 4 per cent. solution of cocaine is dropped upon the cornea at intervals of two or three minutes. It rarely requires more than three drops to anæsthetize the cornea completely and render the operation painless.

All of these cases were operated upon at the hospital, nursed by skilled attendants, and all antiseptic precautions were taken. In none were the patients confined to their beds, with heavy bandages, and darkened rooms. Indeed, all needless and annoying restraints were removed. The patients were allowed to walk from the operating table immediately after the operation to their rooms. On the second or third day they were permitted to walk around on the outside of the building. I have yet to regret the privilege allowed these unfortunates. In one case in particular that was operated upon at the institute, when a conjunctivitis developed on the third day after the operation, the patient was restricted to his room as a precautionary measure. Although no bad results followed the conjunctivitis, the patient lost his appetite and about fifteen pounds in weight. Being an individual accustomed to outdoor life from youth, the confinement told rapidly upon his general health. Notwithstanding Schweigger's advice to the contrary, I invariably remove the dressing, viz., a strip of isinglass plaster, on the second day, and inspect the eye to see if all goes well. On two occasions I have thus been able to save the eye operated upon by the timely instillation of "eye-drops." It might be urged that it is meddlesome curiosity to inspect an eye so soon after an operation, and, consequently, bad practice. It has been my experience to see eyes cut through the cornea by foreign substances, inspected daily lest iritic inflammation or other trouble should occur unobserved, get well. If such eyes do not suffer from inspection, why should an eye operated upon for cataract under strict antiseptic precautions suffer? The truth of the matter is, we have been needlessly cautious in the past, and unnecessarily confined our patients in a dungeon cell, causing them to do just what we wish to avoid, viz., to put themselves into a nervous state, which is anything but conducive to perfect healing of the corneal wound.

THE CONDITIONS OF THE NASO-PHARYNX AS AN INDEX OF DISEASE.

BY WOODS HUTCHINSON, A.M., M.D.,
OF DES MOINES, IOWA.

WHAT connection or correspondence, if any, exists between the condition of the mucous membrane of the naso-pharynx and the state of the general system in health? The first thing that strikes us in a glance at the region is its double relationship, on the one hand with the alimentary, and on the other with the respiratory system, while nowhere else in the body, except upon the retina, are the meshes of the circulatory system more nearly laid bare to our view. Nor is this relationship merely the passive one of simple continuity of tissue. It is the active one of guardianship, with sentinel nerves and cilia supported by a system of distensible elastic cushions, effective in barring out respiratory intruders, and highly trained muscles capable of promptly expelling any alimentary trespasser.

For an intelligent performance of these functions constant communication with headquarters is indispensable; and when we further consider the remarkable vicarious excretory action which the tonsils and fauces are capable of assuming, and the active sympathy which clinical experience has shown them to manifest with many disturbances, I think we are safe in concluding that an inspection of this region furnishes a valuable guide to, if not an absolutely reliable index of the condition of at least the receptive portion of the animal processes. The popular impression that "put out your tongue, sir," is the indispensable preliminary to the medical investiga-

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tion of almost every case is not wholly without a rational basis.

The *rôle* played by the fauces and nares in the exanthemata is a most interesting one, and far from being thoroughly understood. They seem to be pitched upon as the amphitheatre of fierce combat between the marauding germs or their deadly virus, and the peaceably disposed but sturdy and indignant fixed cells of the body.

The mere fact that both gastric and respiratory disturbances are here represented, each disturbing the cell equilibrium from a different standpoint, is hardly sufficient to account for the remarkable intensity of the process. It would almost seem as if those lightly esteemed and much-persecuted bodies, the tonsils, were bravely fighting the battle of the whole organism single-handed. The only theory which seems to throw any fresh light upon the subject is one advanced some months ago—suggested by the fact that the tonsils are by their structure more closely allied to lymphatic glands than to any other tissue—that they are actually breeders of leucocytes, not for replenishing the blood, but for acting as scavengers and sanitary police for the upper part of the alimentary canal. Supposing this to be the case, can we not then largely account for the intense activity of these glands in most of the exanthemata, notably, scarlet fever, syphilis, and diphtheria, as well as in poisoning from sewer gas, or contaminated drinking-water? In response to the demand for phagocytes the normal secretion is first rapidly increased, then, in the struggle to keep up the quantity, quality deteriorates, imperfectly developed cells are poured out, and we say suppuration is established; finally the vitality of the secreting cells themselves is reduced by the strain of their desperate efforts, they perish bodily, and ulceration occurs.

Diphtheria would seem to bear out this explanation even more strongly, for the microscope shows the "membrane" to be composed almost entirely of leucocytes and their débris, the scavenger-corpuscles having hurled themselves upon the attacking bacilli in such myriads as literally to smother them with their dead bodies; also, because of the rapid and serious systemic symptoms which almost invariably occur whenever any considerable surface of the fauces is deprived of its protective covering, or when a region less amply supplied with these corpuscles, such as the nares or stomach, is attacked. In fact, the diphtheritic membrane would seem to have not a few points of analogy to the secretion poured out by the tissues of the oyster around an intruding foreign body, forming the smooth and unirritating pearl, or to the cluster of angry leucocytes around a bacillus tuberculosis which forms the essential basis of the anatomical tubercle.

May not a similar action underlie the production of the typical lesion of typhoid? Peyer's patches may almost be called the "tonsils of the intestines." They are even more typically lymphatic in character than the faucial tonsils. They go through the same stages of hypersecretion, enlargement from excessive cell-multiplication, loss of vitality and ulceration; while the albumin, corpuscle-salts, and débris of leucocytes generally, which form such a prominent element of the "pea-soup" stools, strongly suggest the existence of some such process of scavenger production. That the cells do exercise some sort of restraining influence upon these disease germs is made highly probable by the fact reported by several observers that the fresh stools are almost wholly innocuous, and do not develop infectious properties until ample time has elapsed for all the phagocytes to have perished from exposure to the lower temperature of the external air, a temperature which unfortunately has no unfavorable effect upon the bacilli.

The part played by the lining membrane of the naso-pharynx in a "a bad cold" is alone of great interest and importance: whether the "cold" be the result of wet feet, cold hands, or a draught on the back of the neck, in nine cases out of ten the nares and fauces become the seat of intense morbid activity. The compensatory vascular congestion which affects the entire internal surface of the body, whenever marked contraction of the superficial vessels of the external surface occurs, would partly account for this, but only partly. It is no mere mechanical congestion, but genuine inflammation, accompanied by excessive secretion, and going on to ulceration if the irritation is sufficiently intense. I think we can hardly look upon the intensely irritating properties of the nasal discharge in acute coryza, the promptness with which it excoriates nostril and lip, and its yellow color, without being inclined to regard it as, to some extent at least, an excrementitious product, which supposition is supported by the discovery in it of urea and other nitrogenous extractives, and by its reputed infective properties. Further, when we consider the almost invariable occurrence of digestive disturbances, and the not infrequent appearance of diarrhœa, or those uric-acid storms popularly known as "bilious attacks," as symptoms or complications of a "severe cold," does it not seem probable that an attempt at vicarious excretory action on the part of the whole internal surface of the body is present as a factor in the process?

Such, then, being the close interdependence and important relations existing between the functions of the naso-pharynx and the general system, would it not be reasonable to investigate carefully how far each morbid condition of these parts is symptomatic

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of a general disturbance of equilibrium or nutrition before proceeding to dub it any form of "catarrh," or many-syllabled "-itis," or to attack it by special or local treatment? And yet how little attention do we find paid to this view of the subject in our special text-books? I think it would be safe to say that three-fourths of the cases of pharyngitis which present themselves to a specialist are dependent upon some derangement of either the first or second digestion, and the same proportion of nasal troubles upon a general lowering of the vital tone in all the tissues, the neurasthenia of Beard, yet scarcely more than a page or two, and a scattered paragraph here and there, are devoted to this most important factor.

Instead of being looked upon as a page in the book of general symptoms of diseases, the nose and throat are, I think, far too exclusively ticketed and discussed as distinct separate entities with an existence and pathology almost apart from that of the general system. If we were to look upon the pharynx as we now look upon the tongue we should find it an almost equally reliable and even more delicate index of the condition of the alimentary canal, and if we based our treatment of the morbid conditions presenting themselves upon the same principle, our results would be far more satisfactory and permanent. No one has so far suggested searing a coated tongue with the galvano-cautery or invented a curette for removing the coating, and yet the much-enduring pharynx is cauterized and swabbed and sprayed with a sublime disregard of the fact that it is in nine cases out of ten merely an index of the state of the organs. Viewing them from this standpoint the eye soon learns to distinguish the brick-red congestion of acid dyspepsia ("alcohol throat," "coffee throat"), the dull, purplish crimson of chronic constipation or hepatic torpor, the deep garnet of the lithæmic diathesis, whether "gouty" or "rheumatic;" the flabby "raw-ham" color and frothy mucus of anæmia, and the blanched palate and palely "granular" pharynx of phthisis, and to refer them to their underlying causes, and when this has been done it is surprising how few cases of "idiopathic" pharyngitis are left. If I were obliged to give up either local applications or systemic treatment in the management of pharyngitis, I would unhesitatingly drop local applications.

The connection between morbid conditions of the nasal mucous membrane and states of the general system is less constant and much more obscure, yet I have been greatly struck with the frequency with which our favorite national disease and popular pathological luxury, catarrh (congestive or obstructive rhinitis) is associated with what I scarcely know how to describe other than as a general loss or lowering of tone on the part of all the tissues, as evidenced by a faded complexion, spare form and features, flabby muscles, a digestion which is either openly rebellious or must be treated with respectful consideration, atonic bowels, frequent neuralgic attacks, and abnormal susceptibility to fatigue and worry. I believe I have never seen a case of hypertrophic rhinitis in which some or all of these symptoms were not present. In fact I should be strongly inclined to regard a large proportion of our cases of nasal catarrh as simply a local expression of a general lack of tone on the part of the mucous membrane and erectile tissue covering the turbinated bones with their consequent engorgement, hypersecretion, and swelling. The frequency with which these troubles are encountered in this country may be partially explained by the fact that the American race is undergoing marked and rapid changes in adapting itself to a new and trying environment and that our tissues are consequently in a highly unstable and irritable condition. The most potent influence in the new environment is probably that of climate, and hence the parts of the body most directly exposed to and affected by climatic changes might naturally be expected to suffer most intensely. But that this is not the only influence at work is shown by the fact familiar to all of us, that the classes presenting the largest proportion of nasal troubles are not those most exposed by occupation to climatic changes, such as farmers and day-laborers, but, on the contrary, those least exposed to out-door influences, such as merchants, clerks and their families, and town-dwellers generally. What, then, is the additional predisposing influence rendering the organism thus vulnerable? I answer, lack of sunlight and exercise and consequent imperfect oxidation and defective nutrition, and appeal to the personal experience of the reader for support. Do we not find our largest proportion and most aggravated cases among those who are most closely confined and least energetic in their habits, especially among women and children? If nasal catarrh were treated as merely a prominent symptom of "sunshine hunger," the popular belief in its incurability would be considerably shaken. In fact, I am strongly inclined to regard catarrh as really a valuable danger-signal which will attract the attention of the most indifferent patient. Many of our patients will submit with almost apathetic resignation to any or all of the other symptoms of lowered vitality, but let them once discover the fact that they have "catarrh," and they will move heaven and earth to get rid of it and thus give us an opportunity to build up the entire system by a vigorous course of out-door exercise, sun-baths, cold sponging, rubbing, and rational diet. People can be literally led to live more vigorous and rational lives when they can be neither driven nor frightened in any other way.

Those of us who have tried forcing our catarrhal,

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neuralgic, and dyspeptic patients into the open air for at least two sunshiny hours daily, insisting with Spartan firmness upon their sponging the upper part of the body with cold water every morning, followed by a vigorous rubbing with the hand or a rough towel, at the same time helping nature to get rid of the results of past indiscretion by digestives and appropriate local applications, which latter serve the useful purpose of keeping up the patient's interest, will, I think, have but little doubt of the correctness of the symptomatic theory.

The greatest value of the specialty of rhinology is as a handmaid to general medicine and an aid to diagnosis, especially in that it furnishes our promptest and most delicate means of appreciating an almost indefinable departure from the normal vigor and diminished resisting power of the human body, which is the invariable negative precedent of all positive morbid action.

A CASE OF ABSCESS IN THE ABDOMINAL WALL COMPLICATING FIBROID TUMORS OF THE UTERUS.

BY EDWARD P. DAVIS, M.D.,
DEMONSTRATOR OF OBSTETRICS IN THE JEFFERSON MEDICAL COLLEGE, ETC.

THE following case recently came into the gynecological department of the Jefferson Medical College Hospital, in the service of Professor Parvin; it exhibited an unusual complication of uterine fibroids, which led to an error in diagnosis, and finally to a fatal issue. The case is as follows:

The patient was aged about forty years, and had been married ten years; no children; no miscarriages. Menstruation began at the age of thirteen, and was always regular. Five years ago she had much pain and a small swelling in the abdomen, which increased in size, the pain being always present except during menstruation. A second swelling on the left side developed within three weeks of her admittance to hospital; since then she had been unable to work, and generally confined to her bed; leucorrhœa was always present; she suffered from sharp pains, shooting posteriorly from the uterus, except during menstruation; she had headache occasionally, but had a good appetite. For the past six months she had lost flesh. Shortly after her admission an abscess formed at the swelling, described by the patient as occupying one side of the abdomen, and ruptured spontaneously. The cavity was washed out, and packed with iodoform gauze.

The examination of the patient disclosed the presence of multiple uterine fibroids of large size. The introduction of a probe or of the finger in the abscess cavity gave the impression that the cavity was in one of the fibroids, a portion of which had suppurated through the abdominal wall.[1] Following the rupture of the abscess and its washing out the patient suffered but little, and it was proposed to allow the abscess cavity to close by drainage, and then, if practicable, to perform hysterectomy. About ten days after admission the patient was brought before the class a second time, the abscess cavity was washed out and tamponed with iodoform gauze, without occasioning especial pain or giving rise to collapse; the patient was kept carefully recumbent, but, while being taken to the ward, she complained of sudden faintness, collapsed, and death followed. The most rational cause for death seemed to be embolism, probably septic in origin, from the abscess cavity. A few hours after death a post-mortem examination was made by Dr. Coplin, and his notes are as follows:

Autopsy (one and one-half hour after death).—Rigor mortis slight in flexors of fingers, not marked in the larger muscular structures. The body was fairly well nourished, and still slightly warm. On a line drawn from the anterior-superior spinous process of the ilium to the umbilicus, and about two and one-half inches from the first-named landmark was a circular opening in the skin, about one-half inch in diameter, with irregular jagged and infiltrated edges. This opening communicated with a circular cavity about one inch deep at its centre, and having a capacity of two to three ounces.

The external covering consisted of skin and superficial and deep fascia, and the base was lined with the muscular wall of the abdomen. In the upper portion of the cavity was a small opening which barely transmitted a grooved director, and which communicated with a deeper abscess cavity; this was not examined further.

An incision was made, extending from the suprasternal notch to the symphysis pubis, the abdominal cavity laid open from the ensiform cartilage downward, and the tissues dissected from the ribs on either side. The cavity was further opened by a lateral incision at right angles to the first, extending from one inch above the umbilicus to the axillary line laterally on the left side, in which the superficial abscess cavity was seated. A topographical examination of the organs was made, and the general condition of the cavity noted as normal, except as will be hereafter stated. The thoracic cavity was then opened; immediately upon puncture the lungs entirely collapsed, a condition often noted after sudden death. The pleuræ were normal; there was a small quantity of serum, no adhesions, no ecchymotic petechial spots on their surfaces. The pericardium was next opened and found normal. The right side of the heart was enormously distended with blood, while the left was firmly contracted and empty. Thinking that here lay the cause of sudden death, the venæ cavæ were ligatured, the entire cavity eviscerated, and its contents put aside for more careful examination.

The abdominal cavity was then examined more fully. The pelvis was found completely filled with a tumor lying in what had been the posterior *cul-de-sac*. The anterior surface had pushed the vagina, urethra, and bladder upward and forward, so that the anterior vaginal wall was shaped like an inverted

[1] This diagnosis was made by Dr. Parvin, and also by several others who examined the patient.

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italic *S*, the upper end of the *S* being at the os uteri and the lower at the vulvar outlet. The bladder was entirely raised out of the pelvis, and pushed forward over the pubic bone. This tumor had for its origin or pedicle the posterior lip of the uterus, and was attached as far up as the middle third of the lower uterine segment. It was firmly adherent to the surrounding soft parts and viscera; it was hard and inelastic, and its surface was smooth, although somewhat irregular. Rising from its upper extremity was what seemed to be the uterus itself, more than trebled in its longitudinal axis and with a diameter from before backward of four and one-half inches, and from side to side of five and one-eighth inches, and extending upward to the umbilicus; its surface was irregular but smooth, and had three subserous fibroids, one of which was sessile, and two having distinct beginning pedicles. The right ovary was normal; the left, only partially to be made out, was the seat of a cyst about the size of a goose-egg.

The omentum was firmly adherent to the cyst, and, by bridges, to the wall of the cavity and to the transverse colon, which was pulled down and adherent to the abdominal wall at a point corresponding to the external opening. The adhesion, more properly speaking, was to the parietal peritoneum, just external to which was an abscess cavity lying between the muscular wall and the parietal peritoneum. The capacity and measurements were the same as those already described, and, as noted, it communicated by a small opening with the external abscess cavity. The transverse colon was diminished in its lumen, due largely to the longitudinal extension or traction which was made by the adhesion to the wall. No direct communication could be demonstrated macroscopically as existing between the cavity of the bowel and the abscess cavity, but there is reason to infer that such was the case.[1] The other viscera were normal, except some dilatation of the uterus, which, however, was not marked; the kidneys were normal.

Upon careful dissection of the thoracic viscera, the following points were noted:

The cardiac valves were competent, and showed no evidences of recent marked inflammatory process. The tricuspid valves were slightly thickened, but in no way was their ability to close the opening altered. The other valves were perfectly normal, and there were no intra-cardiac clots, either ante- or post-mortem; the lungs were well aërated; at the base on the left side was a small wedge-shaped area of infarction, the base of which was probably about one-half inch across. In the right middle lobe was a similar but smaller lesion; these were all that could be found upon the external aspect. On dissection, both pulmonary arteries were found completely occluded by a recent thrombus, continuous in both vessels; the process of formation may be briefly described as follows: Thrombosis had occurred in some of the large veins coursing over and through one of the pelvic tumors, and an embolus had been swept into the right side of the heart; there it gained in size by the addition of new elements, and there, too, it probably sent off its forerunners, which formed the two areas of infarct already alluded to; it was then forced into the pulmonary artery, and so completely and instantly occluded its lumen that death was immediate.

As stated by Dr. Coplin, the abscess was entirely independent of the fibroids of the uterus, and probably arose from infection through the intestine; it was impossible, however, by examination of the sac of the abscess before death to satisfy one's self that no communication existed between the fibroid and the abscess; no history of violence or injury to the parts existed to account for suppuration in the fibroid, and no adequate explanation of the presence of pus could be given before the post-mortem examination.

Recent studies in ectopic gestation have shown that it is quite possible for suppuration to occur in the sac of an ectopic fœtus by infection from neighboring intestines.

Jerzykowski[1] reports a case in which the sac of an ectopic gestation was mistaken for an ovarian cyst, until it ruptured by suppuration into the rectum. Morisani's case[2] was similar to the foregoing.

Hecker's collection of 132 cases of ectopic gestation embraces 28 which ulcerated into the intestine.

Barsony's case,[3] in which the fœtal sac was directly accessible through the recto-vaginal septum, illustrates the formation of abscess by proximity to the intestine; it is quite possible that a similar illustration is furnished by many cases of perityphlitic abscess.

Regarding treatment, hysterectomy with thorough examination of the abdominal contents probably furnished the only satisfactory method; nevertheless, the autopsy clearly proved that this operation would have been impossible, or could only have been partial, for one of the chief tumors originating in the posterior uterine wall was too firmly attached in the pelvic cavity to permit its safe removal.

From the standpoint of pathology the sudden and complete embolism which occurred was especially interesting. So, too, the case suggests the possibility of a similar error in the diagnosis of a

[1] In order to prove that a given abscess is due to infection from the bowel, it is not necessary that an absolute perforation should be demonstrated. It is only necessary to prove that the visceral layer of the peritoneum and parietal layer have been brought together and held while the inflammatory process has converted the two points in juxtaposition into embryonic tissue, and then made the lymphatics of the parietal and visceral layers continuous, and at the same time obliterated the communication between the centre of the area of adhesion and the lymphatics of the mesentery; the lymph-spaces are then occluded, and infection of the wall is almost a certainty, unless very rapid cicatrization takes place.

[1] Nowiny Lekarskie, No. 4, 1889.
[2] Wiener klinische Wochenschrift, No. 4, 1889.
[3] Centralblatt für Gynäkologie, No. 22, 1889

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fibroid of the uterus undergoing suppuration, the abscess opening through the abdominal wall—an event exceedingly rare; had neither autopsy nor abdominal section in life been made, this case would have been regarded as typical of such suppuration.

CLINICAL MEMORANDA.

THERAPEUTICAL.

Eucalyptus in Catarrh of the Respiratory Tract and Obstinate Cough in Children.—For several years I have been in the habit of using preparations of eucalyptus, both internally and by inhalation, in the treatment of certain cases of acute and subacute bronchial and laryngo-tracheal catarrh, more especially in children. Some three years ago, in a case of peculiarly obstinate cough in a child, not the cough of pertussis, for which all physical basis, so far as examination could show, seemed to have been removed, I was advised by Professor J. M. Da Costa to use fluid extract of eucalyptus, which had not been employed in the acute bronchitis from which the cough apparently held over. Previous to this, also with Dr. Da Costa's advice, a reliable preparation of belladonna had been used and had failed. Recovery was so prompt as to be striking. Since that time I have repeatedly resorted to the same expedient in similar cases, with equally satisfactory, though not always equally rapid, result. While the use of eucaylptus in the treatment of inflammatory conditions of the respiratory tract is familiar, I do not remember to have seen mention, in print, of this particular phase of its usefulness. It has seemed to me worthy of report, and I have mentioned the circumstances under which I began its use, in order not to claim credit for originality not mine. The value of eucalyptus in relieving headaches and facial neuralgias not of malarial origin, its undoubted value as an inhalation in pertussis, and the property of relieving semi-spasmodic coughs here reported, seem to indicate a nervine quality in some of its constituents. For inhalation in diphtheria, croup, laryngitis, whooping-cough, and phthisis, I prefer eucalyptol; but for internal use in bronchial and laryngo-tracheal inflammations the fluid extract seems to serve a better purpose.

In acute cases my usual custom is to administer it in connection with ammonium salts; in subacute cases a little paregoric may be advantageously added. In the obstinate irritative coughs following inflammatory affections which have apparently subsided, the fluid extract of eucalyptus is best given without other drug, in syrups of tolu and acacia or in an emulsion of oil (castor oil, olive oil, cod-liver oil, almond oil), as necessary, to disguise its taste or modify its action. The dose is about five drops for a child of two years. The following are specimen formulæ:

℞.—Ammonium carbonate . 8 to 16 grains.
Ammonium chloride . 22 to 48 "
Fluid extract of eucalyptus 1½ fluid-drachms.
Syrup of acacia . . ½ fluid-ounce.
Syrup of wild cherry, *or* / Glycerin, *or* / Syrup of tolu } ½ "
Water, sufficient to make 2 fluid-ounces.

For a child two years of age, with acute bronchial or laryngo-tracheal catarrh, one fluid-drachm in milk or water every two, three, or four hours.

℞.—Aromatic spt. of ammonia } of each
Camph. tincture of opium } 2 fluid-drachms.
Fluid extract of eucalyptus 1½ fluid-drachms.
Syrup of acacia } of each ½ fluid-ounce.
Syrup of wild cherry }
Water, sufficient to make 2 fluid-ounces.

For a child with subacute bronchial catarrh, one fluid-drachm in water every two, three, or four hours.

SOLOMON SOLIS-COHEN, M.D.
219 SOUTH SEVENTEENTH ST., PHILADELPHIA.

OBSTETRICAL.

A Substitute for Post-mortem Cæsarean Section.—Passing through the wards of the Philadelphia Hospital about a year ago, when not on duty, my attention was called to a dying woman in the last month of gestation, lying in the laparotomy-room, surrounded by a group of resident-physicians who were waiting for the moment of death, that one of their number might do a post-mortem Cæsarean section. The woman evidently had but a short time to live; there was no pulse at the wrist, the death-rattle sounded in the throat, the eyes were opened, insensible and glazed. The fœtal heart-sounds, curiously enough, were still quite distinct and regular, and active fœtal movements could be seen and felt. In view of the child's good condition, and of the possibility that in the woman's lingering death the fœtus might die before its mother, I advised the resident-physician in charge of the case to dilate the cervical canal with his fingers, insert his hand and do a version followed by immediate extraction; surmising, as it proved, correctly, that the tissues of the dying woman could offer no resistance to these manœuvres. Although there was not the slightest dilatation of the os when the operation was begun, Dr. Sharpless, the physician-in-charge, extracted the child in less than five minutes. It was born alive, and soon cried lustily. It lived a week, I believe, and died of some condition independent of the manner of its birth. The woman's death, a short time after delivery, was certainly not hastened by the operation; in fact, she seemed a trifle better after it. At the post-mortem examination meningitis was found to be the cause of death.

Where the procedure just described is at all possible, I believe it should always be preferred for post-mortem Cæsarean section. By waiting for the mother's death one may lose the infant as well; the post-mortem section is a disfiguring and bloody operation which would horrify the friends of the patient, and for which their consent could not always be obtained; and, finally, there is the alarming suspicion entertained by the by-standers, if not by the physician, that the woman might not have been dead, but was killed by the operation. On the other hand, version and extraction are as quickly done as section, if one can judge by this single experience; the child is rescued while it is still in good condition; there is nothing repulsive about the operation to the bystanders, and death is not hastened by it.

BARTON COOKE HIRST, M.D.,
Professor of Obstetrics in the University of Pennsylvania

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MEDICAL PROGRESS.

The Excision of Hæmorrhoids.—DR. LEWIS S. PILCHER, who approves of Whitehead's method of removing extensive hæmorrhoids *en masse*, mentions several cautions which he thinks should be observed in performing the operation (*Annals of Surgery*, May, 1890):

1. It is possible to injure the sphincter so that permanent fæcal incontinence may result. It is by no means easy to recognize the muscular fibres in the first stage of the dissection, particularly if the tumors are large and the sphincter is flabby and has been relaxed by preliminary stretching. Hence, the first step in the operation should be identification of the muscle, after which it may be drawn aside and the enucleation proceeded with.

2. The surface of the sphincter should be closely hugged, thus keeping outside of the muscular tissue of the tumor. This facilitates the operation and causes much less hæmorrhage than if the dissection is through the diseased tissue. For the latter reason the dissection should be carried well up beyond the hæmorrhoidal tissue before making the final transverse section of the bowel.

3. In the aggravated cases there is always relaxation of the rectum with a tendency to prolapse, and considerable retrenchment of the bowel is important in order to secure the most satisfactory results. On the other hand, none of the skin at the anal margin should be removed, however redundant it may seem at the time. When suturing of the intestine and skin has been completed the line of sutures will be some distance outside of the anus, but in time the rectal walls regain tonicity and retract, the sphincter contracts and, finally, the line of union will be within the anus.

4. The retrenchment of the rectum should be exactly equal on each side, or partial ectropion of the mucous membrane may result where the mucous membrane is the longest.

Clamp and Cautery Operation for Hæmorrhoids.—DR. TRZEBICKY reports a series of 120 cases of hæmorrhoids operated upon by the clamp and cautery, in every case with good results. In but two cases was there return of the hæmorrhoids after a period of four years. Trzebicky concludes that the cautery operation is the best of all methods for the radical cure of hæmorrhoids; that there is no danger of hæmorrhage or subsequent stricture; that it is suitable to all varieties of the disease, and that the only contraindication is suppuration within the hæmorrhoids or in the surrounding tissue.—*Schmidt's Jahrbücher*, April 15, 1890.

Oubain in Whooping-cough.—DR. GEMMELL, of Glasgow, publishes his results in the treatment of whooping-cough with oubaïn (*British Medical Journal*, April 26, 1890), an alkaloid derived from an African plant used by the natives as an arrow poison. The alkaloid is exceedingly powerful, $\frac{1}{2500}$ grain causing death by cardiac paralysis in frogs.

When he began to use the drug in whooping-cough the author gave doses of $\frac{1}{5200}$ grain, but soon increased the amount and has now adopted $\frac{1}{1000}$ grain every three hours as the proper dose for a child of five years. With these amounts the paroxysms were quickly reduced in number and severity, though in two exceptionally severe cases the dose was gradually increased to $\frac{1}{250}$ grain every three hours. He has treated 49 cases with the drug, of which number 25 recovered, 4 died, and the remainder are still under observation. The fatal cases died from diphtheria, tubercular meningitis, capillary bronchitis, and progressive emaciation. Gemmell thinks his observations prove that oubaïn is of marked benefit during all stages of the disease; that given in the first stage it cuts short the attack; given in the second stage it diminishes the severity of the disease, and in the third stage it hastens convalescence remarkably.

The best form in which to administer it is in a solution, of which one drop represents $\frac{1}{1000}$ grain of oubaïn.

The Treatment of Dropsy.—At the recent Congress for Internal Medicine, held at Berlin (*Münchener medicinische Wochenschrift*, March 18, 1890), FÜRBRINGER deprecated the use of the newer diuretics and cardiac tonics and stated that digitalis remains the sovereign remedy in the treatment of all varieties of cardiac and renal dropsy, even when due to acute glomerulo-nephritis. He believes that there is no anatomical change of the heart which is a contraindication to the use of digitalis, and that it can be safely given for long periods. Strophanthus and caffeine he evidently thinks are only useful as adjuncts to digitalis when, as is sometimes observed, the latter fails to increase the urinary secretion.

Excision of Local Pulmonary Tuberculosis.—At the recent Congress of the German Society for Surgery PROFESSOR TILLMANNS exhibited a man of about thirty years from whom he had removed a tubercular deposit involving a portion of the left lung, pleura, and thorax. After the operation the lung contracted in such a manner that by a second operation the remaining tubercular area was completely removed. The wound was covered with cutaneous flaps and healed completely, and the patient is now able to work. As the operation was performed about two years ago the cure may be regarded as permanent.

Tillmanns thinks that the surgical treatment of pulmonary tuberculosis is proper if the disease is localized, but that in most cases two operations will be required—the first to expose the affected part in order to bring about atrophy and contraction; the second to remove the disease.—*Lancet*, April 19, 1890.

The Treatment of Dysentery with Salicylic Acid.—CIMBALI advocates the use of salicylic acid combined with opium in the treatment of dysentery (*Internationale klinische Rundschau*, April 20, 1890). He administers seven grains of salicylic acid with one-sixth or one-fourth grain of powdered opium every four hours, and finds that the number of stools is rapidly reduced, the pain and tenesmus become less, and complete cure follows in four or five days, though it is safer to continue the medicine a day or two longer.

The author's opinions are founded on fifty cases treated by this method, in none of which were untoward effects produced.

He has also had good results in the treatment of chronic intestinal catarrh with salicylic acid.

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THE TREATMENT OF ANAL FISTULA COMPLICATING PHTHISIS.

THE propriety of surgical interference in cases of anal fistula complicating phthisis is a question on which many and widely divergent opinions have been held. At the present time the majority of practitioners undoubtedly recognize the fact that in many cases recourse to the knife is demanded, but that in others surgical treatment would aggravate the pulmonary disease. Just how to distinguish cases suitable for operation is often puzzling, and appreciating this difficulty, MR. HERBERT W. ALLINGHAM formulates a series of rules for the guidance of the surgeon (*British Medical Journal*, April 12, 1890).

Allingham considers, first, fistula occurring in the course of acute phthisis. In such cases the fistula usually begins as a tuberculous ulcer of the rectum, and has a large internal, but no external, opening. Here no attempt should be made to close the sinus, but the patient must be relieved of the distress incident to the accumulation of fæces and disintegrated tissue in the peri-rectal pocket by an incision converting the blind internal fistula into a complete fistula.

Fistulæ developing in the course of slowly advancing chronic phthisis are next considered by the author. This variety usually begins just within the verge of the anus, and has a large external opening. The adjacent skin is much undermined, and the edges of the orifice are infiltrated and unhealthy. In these cases radical cure should be sought, as the system cannot afford the constant suppuration, the checking of which will certainly prolong life and possibly assist in arresting the pulmonary disease. The main sinus should be freely opened, avoiding the external sphincter as far as possible, the entire cavity curetted, and unhealthy skin removed. A dry, iodoform-gauze dressing should be applied, perhaps dusting the cavity with pure iodoform, though Allingham seems to regard the materials of the dressing as of little importance so long as they are dry.

A "strumous fistula" which, the author thinks, occurs in persons with an inherited tubercular diathesis is also described in this paper. Such fistulæ should be promptly treated, as they not infrequently become tubercular, or, at least, open the way to general tubercular infection. Indeed, fistula, even in a robust individual, seems to be a peculiarly accessible port for the entrance of the bacillus tuberculosis, and it should be the invariable rule to operate on such cases without delay.

Regarding the choice of anæsthetics for operations on phthisical patients, Allingham distinctly prefers chloroform, as it is less likely than ether to increase cough. But from this opinion most American surgeons will dissent, as the heart is invariably weakened in phthisis and less able than in health to withstand the depressing effects of chloroform. The condition of the heart and the character and amount of cough should be the guides to the anæsthetic suitable to each case. If cough is severe and spasmodic and the heart not markedly weak, chloroform is probably safer, while if cough is not a prominent symptom ether should be used.

After such operations it is desirable that the patient should sit up, if possible, on the following day, for if the recumbent position is maintained longer hypostatic congestion and aggravation of the pulmonary disease is likely to occur. Moreover, the operation should be performed under the best sanitary conditions available, Allingham advising that the patient be previously removed to the seashore.

THE TREATMENT OF VARICES OF THE VULVA.

THE practical importance of the extravasation of blood about the vulva becomes apparent when we consider the occurrence and course of hæmatomata

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of this region, varices, or the rupture of a vessel during labor. Not only may sudden acute hæmorrhage bring the patient into a condition of collapse, but also thrombosis and embolism may result, with exceedingly serious consequences.

A recent case of pulmonary embolism following hæmatoma of the vulva, in which a dangerous pneumonia resulted, emphasizes these remarks. In the *Revue Médico-chirurgicale des Maladies des Femmes*, March 25, 1890, BATUAUD writes upon varices of the vulva and their importance in obstetric practice, basing his remarks upon a recent thesis by Moussard, of Paris.

So far as diagnosis is concerned, there can be but little difficulty in recognizing this condition. The prognosis is favorable in ordinary cases, but depends upon the possibility of rupture and embolism. If they occur during pregnancy excessive exertion should be avoided—violent respiratory movements are especially injurious; and should rupture be threatened, pressure should be made by a T-bandage; when local irritation and discomfort are present, cocaine and starch-powder, or starch-water, will be found useful. When hæmorrhage occurs, compression should be promptly made, either by a small *pincette* of some sort or by hæmostatic forceps if the point of rupture is discernible; if not, an antiseptic compress and T-bandage are indicated.

In cases of syncope after labor, depending upon severe hæmorrhage from whatever cause, good results have followed the hypodermic injection of dilute solution of chloride of sodium (6 to 1000).

During labor the bladder and rectum should be promptly emptied to relieve pressure, the pelvis should be elevated, and precautions taken that the head is not born too soon, or with violence. Chloroform is found a most useful adjunct in modifying the forces of labor.

The forceps is occasionally indicated to restrain the head and control its exit.

Pressure may be made upon the varices during labor by the fingers of the obstetrician, or by an antiseptic pad should rupture threaten.

THE MEETINGS AT WASHINGTON AND NASHVILLE.

AS a medical newspaper, the current issue of THE MEDICAL NEWS presents, in an interesting narrative form, the proceedings of the meetings of the American Association of Physicians and the American Surgical Association, held at Washington, and of the American Medical Association, which has been in session at Nashville during the week.

Long reports, detailing tedious discussions and matters of limited interest, should find no place in the columns of a weekly periodical such as THE NEWS. Their proper sphere is in the volumes of Transactions issued by the societies themselves; and with this in view the correspondents of THE NEWS have been restricted to presenting only such material as possesses general attractiveness.

In the coming issues will appear at length the more valuable original papers read at these meetings.

SOCIETY PROCEEDINGS.

THE ANNUAL MEETING OF THE ASSOCIATION OF AMERICAN PHYSICIANS.

Held at Washington, D. C., May 13, 14, and 15, 1890.

THE proceedings of the Association, so far as its scientific work was concerned, opened with a paper by DR. JAMES E. REEVES, of Chattanooga, Tenn., upon "Some Points in the Natural History of Typhoid Fever," in which he considered the character, course, and complications of the disease from its inception through convalescence. (See THE MEDICAL NEWS, May 31st.)

In discussion, Dr. J. C. Wilson, of Philadelphia, spoke of his belief in the great value of Brandt's method of using the cold bath whenever the temperature rises to a point over 101.5°, and briefly detailed the favorable results obtained by him in the treatment of thirty cases of the disease in the wards of the German Hospital in Philadelphia. In the majority of these no medicine was given, in a few a little calomel being occasionally used to evacuate the bowels at the beginning of the attack, and in every instance the results were extraordinarily good.

Following Dr. Wilson, Dr. Alfred L. Loomis, of New York, stated that he failed to recognize the distinct forms of typhoid fever characterized by Dr. Reeves as mild, intermediate, and malignant, and expressed surprise at the statement of the author that he had seen five recoveries in typhoid fever after perforation of the bowel had occurred. He himself had never seen a recovery where perforation really took place; although he had observed cases in which peritonitis of a localized or diffuse character had complicated typhoid fever, not due to perforation, and resulting in recovery. Dr. Loomis believed that cardiac softening is a very common complication of typhoid fever, and asserted that if a loud systolic murmur is heard at the apex the prognosis is unfavorable, as it shows that softening has occurred, and that thrombosis or sudden dilatation has taken place, the latter resulting from some sudden movement straining the softened viscus. He thought that getting up too soon probably caused the symptoms of a weak, dilated heart following typhoid fever. Dr. Loomis then proceeded to state that he had recently seen in New York a form of nervous trouble consequent upon typhoid fever which, as far as he was aware, had been described nowhere except in a paper by Dr. V. P. Gibney, in

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which the author had detailed several instances of what he was pleased to call "typhoid spine." This condition is marked by great pain and tenderness over the spinous processes of the vertebræ, and has been confused by some physicians with lumbago and other similar conditions. Eventually the cases which had consulted Dr. Loomis were cured by the use of the hot iron and a particular jacket devised by Dr. Gibney.

Drs. S. Weir Mitchell and Abraham Jacobi objected very strongly to the idea that typhoid spine was in any way a new or distinct sequelæ of typhoid fever, both agreeing that it was simply a spondylitis.

Dr. Hosmer A. Johnson, of Chicago, stated that he had seen a case of what he believed to be recovery after perforation of the intestine in typhoid fever, and detailed the symptoms which gave rise to this belief.

Dr. William Pepper, of Philadelphia, agreed with the opinions of Dr. Mitchell and Dr. Jacobi, and expressed the thought that the immunity from typhoid fever in Chattanooga, as stated by Dr. Reeves, was very extraordinary, and must be largely dependent upon some peculiar condition of the soil. He also insisted upon the great value of the use of nitrate of silver internally in typhoid fever throughout the attack as a means of avoiding complications and lessening its severity.

The paper of DR. NORMAN BRIDGES, of Chicago, on "Appendicitis" (see page 549) was discussed by several of the physicians present, and Dr. Atkinson, of Baltimore, stated that in his opinion the surgeon is often called too late, and yet, on the other hand, a large proportion of the cases get well if left alone; leaving us in a position of indecision as to what course is to be pursued.

Dr. R. Fitz, of Boston, believed that there were many cases of mild catarrh of the appendix that never come to the care of the physician, and gave the conclusions derived by him from seventy-two cases which he had personally seen. He thought that the five hundred cases previously collected by him and reported some four years ago had been somewhat misleading in respect to the results derived from them. His opinion at present is that there are half as many females affected as males, and he added that while 11 per cent. in his statistics had recurring attacks, 44 per cent. in his personal experience had recurring attacks. Dr. Fitz also made the interesting statement that recurring attacks take place with equal frequency, whether the cases be treated medically or surgically, unless the appendix be removed, the general average of recovery being 74 per cent. He believed that the mortality of medical treatment is only 11 per cent., while that of surgical treatment is 40 per cent., but it is to be remembered that the high percentage of surgical treatment rests largely upon the serious and advanced condition of the disease before the surgeon is called in or given the opportunity to operate. He also thought that two simple rules could readily be formulated — namely, that where the symptoms were very urgent, or where a tumor was present the surgeon should operate, but that in cases of slow recurrence without urgent symptoms medical treatment is to be resorted to, as surgical treatment is difficult owing to the changes produced in the relative positions of the parts caused by previous attacks.

Dr. Jacobi, of New York, objected to the term "turn the case over to the surgeon," saying that in his opinion physicians should be able to perform four surgical operations—namely, intubation, tracheotomy, herniotomy, and abdominal section for appendicitis. He did not think that localized peritonitis in the right groin should be operated upon during its stage of activity, but punctured if necessary and operated upon in the course of a week or two, after the severity of the inflammation had passed, provided that it was considered necessary to use the knife. Dr. Pepper, on the other hand, did not believe that any physician should operate upon such a case and thought it required all the skill of the thoroughly trained surgeon to undertake such a procedure, the physician always sharing his responsibility with a surgeon. Dr. John H. Musser spoke of tuberculosis as a cause of appendicitis, having seen three such cases.

The paper of DR. LUSK on "Antisepsis during Labor" (which will appear in THE MEDICAL NEWS, May 31st) was discussed by Drs. Welch, Pepper, and Roosevelt, who all expressed their interest in the conclusions reached by the essayist, and agreed with him as to the inadvisability of the vaginal touch in most cases. The fact that the hands of the accoucheur could not be considered sterile, although they might be aseptic, even if a very strong solution of bichloride of mercury was used, was pointed out by Dr. Welch.

DR. DANA read a very able paper upon "Seizures Accompanied by Shock and Coma," which was discussed by Drs. Lyman, Loomis, and Edes. Dr. Loomis spoke of the difficulty of differentiating embolism, apoplexy, and thrombosis in diagnosis. In many cases he has found supposed apoplexy to be in reality cerebral thrombosis with softening. The patient in embolism, however, generally does not lose consciousness, and he thought that before fifty years of age such attacks are always due to extravasation and after fifty to thrombosis and softening. In his opinion, too, uræmic coma cannot be diagnosed by the condition of the pupil. Dr. Jacobi stated that in his experience the œdema of uræmic coma is often unilateral, not bilateral, and that its diagnosis cannot rest upon any such diffusion of the puffiness.

The paper of DR. S. WEIR MITCHELL, as referee, upon "Disorders of Sleep," was unusually interesting, and dealt with the psychical motor and sensory disturbances of the præ-dormitium and post-dormitium, including sensory, motor, and emotional overflows or explosions, as well as the condition of the subjects of waking numbness, and post-somnic paresis and paralysis. Dr. Mitchell also dwelt on the curious nervous disorders known as night neuralgias, night choreas, and failures of respiration in sleep.

Dr. Folsom, the co-referee, considered the physiology of sleep, the causes and conditions of insomnia, the influence of habit and the various diseases and poisons which produce it. He also spoke of the vaso-motor conditions associated with disorders of sleep, and discussed quite fully the treatment of these by measures directed to the improvement of hygienic surroundings of the patient and by the use of certain drugs. He believes that drugs are to be generally avoided as far as possible, but that chloral, hyoscin, methylal, and sulphonal are the best remedies to be resorted to if drugs are necessary. Dr. Pepper added that a person might train himself to sleep and to put aside all

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mental effort, arranging the body in such a manner as to let it rest entirely upon the skeleton, thereby affording the muscular system total relaxation and rest. As the superior oblique and external rectus muscles of the eye are generally severely strained by prolonged eye-work, and ache, he advised rotation of the eyeballs upward during the endeavor to obtain sleep, in such a way as to relieve these muscles from all exertion. Dr. H. M. Lyman, of Chicago, said that he believed that many cases of insomnia were due to rheumatism, and recommended the use of milk of sulphur and bitartrate of potassium in the proportion of one to five parts. Dr. G. L. Peabody, of New York, related a case where full doses of soda and rhubarb cured insomnia which had resisted all other remedies. Dr. M. Allen Starr, of New York, expressed great confidence in sulphonal as a hypnotic, and believed it to be valuable, particularly if food is taken just before instead of just after its administration.

In closing the discussion, Dr. Mitchell remarked that many cases of insomnia, though depending upon gastric or other trouble, failed to recover from the disease causing the insomnia unless sleep was induced by the use of drugs. He also recommended the administration of sufficiently large doses of hypnotics to make the production of sleep sure of occurrence, as the use of smaller doses if they fail, produces a condition of doubt in the patient's mind as to his ability to sleep, or the power of remedies to make him sleep, which is unfortunate and interferes with successful results. He advocated the administration of thirty or more grains of bromide at once, or that one-hundredth of a grain of hyoscin should take its place. Finally, if these both fail, he depended upon sulphonal.

DR. CHARLES L. DANA, of New York, followed with a paper upon a study of the "Sensory Disturbances in Hysteria," which showed careful study of the entire subject, and was received with great interest.

The paper of DR. WHARTON SINKLER, of Philadelphia, upon migraine, dealt very largely with its causes, its unusual visual phenomena, and particularly with its treatment. He recommended phenacetin, antipyrine, eucalyptus, and caffein in large doses as the best means of treatment.

A very interesting demonstration was that of DR. HAROLD ERNST, of Boston, who showed to the Society the body of a rabbit, which was one of three to which he had given, by means of a hypodermic needle, in the abdominal region, five or six drops of milk derived from the udder of a tuberculous cow. All the abdominal viscera were thickly studded with miliary tubercles, but the lungs were not affected. Dr. Ernst naturally believed this to be a very strong evidence of the communicability of tuberculosis by means of milk to human beings, and asserted that he was sure that the rabbit which had died after its inoculation was not affected by tuberculosis arising independently of his injection of the milk, as rabbits which did not receive the milk were healthy at this date. He then proceeded to discuss briefly and to place on record certain studies carried out by Dr. Stephen Martin, of Boston, concerning the *contagium vivum* of cow-pox and vaccine material. Dr. Martin had been able to make cultures through five generations of this material, and had inoculated children with matter derived from the fifth generation with success, since these children, when vaccinated with lymph which had been found active in other children, failed to develop the typical vesicles. He stated that Dr. Martin was continuing his investigations and would report further upon them at future meetings of the Association.

DR. D. W. PRENTISS, of Washington, showed a man with an extraordinarily slow pulse, the pulse-beat at the time of the exhibition being but 30 per minute, but had been as low as 11, the respirations being 32. He also presented a boy suffering from rheumatic purpura, in whom so large an amount of blood had been poured out beneath the skin on the anterior belly wall as to produce a slough. In the discussion of this last case Dr. Atkinson, of Baltimore, stated that he had seen somewhat similar cases, and knew of instances where similar sloughs had occurred. Dr. Tyson, of Philadelphia, also mentioned one such occurrence in his experience. Dr. Jacobi expressed the belief that all these cases were dependent upon changes in the bloodvessel walls, and that in those instances where the blood had undergone a change the leakage which resulted was due to alterations in the bloodvessels resulting from the hæmic alterations.

DR. W. H. WELCH, of Baltimore, then reported a case of "Acute Diphtheritic Colitis with Peri-pancreatic Fat-necrosis." The patient, fifty-three years old, had been a hard drinker. Three days before death he became delirious and was admitted to the hospital. Temperature elevated—when first observed, 101.5° F.; on day of death, 105.4° F. Pulse 120 to 132, compressible. Spleen not enlarged. Abdomen tympanitic, tender on pressure, especially in epigastrium. Urine slightly albuminous. Tongue clean and moist. No diarrhœa until a few hours before death, when he had an offensive liquid stool. Urine and fæces passed involuntarily. Patient became unconscious and died two days after admission to hospital.

At the autopsy, which was made a short time after death, were found numerous foci of so-called fat-necroses in the transverse meso-colon, and in the adipose tissue around the pancreas, with beginning sequestration of the pancreas. Liver intensely fatty. Contents of bile-ducts and of gall-bladder viscid, clear, with only slight yellowish tint. Renal epithelium fatty. Ecchymoses, small ulcers, superficial necroses and diphtheritic exudation in large intestine. The foci of fat-necroses, as well as the liver, bile, and spleen, contained in large number a single species of bacteria, which was isolated and studied in pure culture. The organisms are bacilli, belonging to the group of colon bacilli, and probably identical with the bacterium coli commune. Cultures and microscopical specimens from this case were exhibited.

He also reported a case in which symptoms suggesting intestinal obstruction existed. Exploratory laparotomy was performed. Numerous foci of fat-necrosis were found in the omentum and mesentery and a swelling in the region of the pancreas, but no intestinal obstruction existed. Portions of the omentum containing necrotic foci were excised and were examined microscopically by the writer. The patient recovered.

Following this report DR. REGINALD FITZ, of Boston, described a "Case of Acute Pancreatitis," which illustrated the suppurative in contrast with the hæmorrhagic and gangrenous varieties of the disease. Microscopical

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preparations were shown and the recent literature on the subject was reviewed.

DR. E. O. SHAKESPEARE, of Philadelphia, then read a paper entitled "What Can and Should be Done to Limit the Prevalence of Tuberculosis in Man?" In this essay the speaker advanced the following propositions:

1. The bacillus tuberculosis is the sole active or exciting cause of the disease, which is infectious or contagious and non-hereditary.

2. Whilst on the one hand the discovery of the bacillus has advanced our methods of treatment but little, on the other hand it has revealed most important principles upon which to base efficient means of preventing the spread of the disease.

3. In view of the admitted inefficiency of all present modes of treatment of actual cases of tuberculosis, effective prophylactic measures are infinitely more important to the general public, and should also be to the physician, than the most skilful therapeutic measures.

4. Since analysis of the fullest records bearing upon the relation of family history to the causation of tuberculosis can possibly account, through hereditary predisposition, for little more than one-fourth of the cases, the most perfect measures conceivable for the lessening of that influence cannot be rationally compared in importance to those which are essentially based upon the destruction of an infective poison, which is virulent enough to produce the disease, not alone in the comparatively few who may be born with hereditary predisposition, but also to cause tuberculosis in the majority who succumb, notwithstanding the absence of an hereditary weakness.

The following general principles underlie an efficient system of prevention of tuberculosis:

1. From the standpoint of the already diseased, effective and preventive measures should look to the rapid destruction of the tubercle bacilli in the excretions and secretions, and by as little association of the well with the sick as possible.

2. From the standpoint of those liable to become infected, nothing which may contain the living tubercle bacillus should be permitted to enter the digestive apparatus. Rigid inspection of meat and milk is a necessity.

3. Tuberculous subjects should not be admitted to hospital wards in which those with other diseases, especially of the lungs, are confined. In general hospitals, consumptives should be assigned to special consumptive wards.

4. Special hospitals for the treatment of consumption should be established.

Dr. F. P. Kinnicutt followed with a paper upon "Methods of Diagnosis in Diseases of the Stomach."

Dr. F. C. Shattuck also read a paper upon the same subject.

The meeting closed with "A Report of Two Cases of Acromegaly," by Dr. J. E. Graham, of Montreal, which will be published in the columns of this journal.

ANNUAL MEETING OF THE AMERICAN SURGICAL ASSOCIATION.

Held at Washington, D. C., May 13, 14, and 15, 1890.

THE meeting of the American Surgical Association was opened by DR. P. S. CONNER, of Cincinnati, who read a short but forcible paper upon "The Surgical Treatment of Tumors of the Bladder." The essayist stated that the ultimate prognosis in all cases of cystic neoplasm was bad, even though the tumor was, in itself, not malignant. In all, he was able to collect the statistics of 176 cases upon which operation had been performed and the result noted. The general resultant mortality was 22.7 per cent. In males 26.6 per cent., in females 13.46 per cent.

In only 13 per cent. of the general mortality could death be attributed directly to operation, and even in this proportion previous conditions played an important causative *rôle*. In nearly all there was decided relief from distressing symptoms.

As to operative technique the dilatability of the urethra in women suggests in them the advisability of using this passage for the removal of new-growths. Even though incontinence occasionally follow, it is generally temporary. In males the choice between the high and the perineal incision is still *sub judice*.

A study of statistics gives no solution of the problem, as the mortality is practically the same in each. Since the graver cases are usually relegated to the suprapubic operation, however, the fact that this procedure gives about as slight a mortality as the perineal cut is distinctly favorable to the high operation. From the perineum a clean exsection of the growth with subsequent suture of the divided tissues is not possible. Even diagnosis at times cannot be made, since there are many cases where the bladder is so displaced that the finger cannot reach it from the perineum. By the suprapubic cut the whole operative field is open to inspection and palpation, and can be subject to every detail required by modern surgery. Excepting perfect drainage, it has every point in its favor.

The author concluded his paper with the following statements:

1. Only after operation is there much chance of recovery from any kind of vesical tumor.

2. Operations should be done in all except the least and most severe cases.

3. As a rule, in males, the bladder should be opened above the pubes.

4. The removal should be as complete as the situation and extent of the growth will permit.

In the discussion which followed the reading of this paper it was generally conceded that the perineal operation was frequently insufficient, even for exploration, especially when the prostate was enlarged. There was a practically unanimous expression of opinion as to the ease and safety of the high operation.

Dr. W. W. Keen, however, stated that in one case upon which he operated, even though both bladder and rectum were fully distended, it was only after putting the patient in Trendelenberg's position that the interior of the bladder could be explored.

Dr. C. B. Nancrede stated that even with a suprapubic incision, and though the finger could be carried over every portion of the cystic mucous membrane, he, on one occasion, was unable to determine whether or not a tumor was present. To his finger none was perceptible, while two of his colleagues distinctly located a neoplasm. The subsequent history of this patient clearly indicated that in reality there had been no bladder tumor.

In cases where the condition of the bladder or urethra is such that it is advisable to maintain a suprapubic out-

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let for the urine, both Drs. Hunter McGuire and A. Vander Veer stated that this artificial outlet could be so managed by the patient that the urine could be retained for several hours.

Dr. D. Hayes Agnew alluded to the importance of diagnosis in these cases, and said that he had been materially aided by passing into the bladder a small instrument especially designed for this purpose and snipping off a portion of the growth for microscopical examination.

Several of the members spoke of the aid afforded, in examination of the base of the bladder, by two fingers passed into the rectum, by means of which the *bas fonde* could be made accessible to search from above.

Dr. L. McL. Tiffany stated that unilateral surgical kidney was peculiarly liable to occur in connection with bladder tumors.

DR. STEPHEN SMITH, of New York, then read a paper in which he carefully discussed, from the standpoint of a general practitioner, the treatment of fractures of the femur. He explicitly stated that his purpose was to advocate the treatment which would give the best results in the hands of men not especially trained in surgical work. After carefully considering the mechanics of displacement, Dr. Smith stated that in his opinion all fractures of the femur are best treated in the extended position. When the break is just above the condyles this position, of course, increases the tendency to backward displacement of the latter; extension of the foot will, however, relieve the tension upon the gastrocnemius, thus enabling the fragments to be accurately apposed. Extension should be exerted by the ordinary method of adhesive straps applied to the leg and a weight attached to them passing over a pulley at the foot of the bed. By means of the straight position and extension the muscles are drawn taut and the fragments are strapped in proper position. The number of pounds employed to exert tension should be about twenty, except in the case of children, when this would exceed the weight of the patient. Finally, four short splints of light wood are applied about the thigh and secured in place by tapes.

Dr. Agnew agreed with Dr. Smith in the main, but was in the habit of placing all fractures just below the trochanters upon a double inclined plane and making extension from the knee. He objected to the primary plaster dressing, on the ground that it caused much disturbance in adjustment and removal, prevented inspection of the parts, and was liable to exert an injurious amount of pressure, or, on the subsidence of swelling, become so loose that motion at the seat of fracture was possible only after consolidation of the bone should the plaster dressing be applied. Under no form of treatment was union without shortening possible.

Dr. J. H. Packard believed that any result which enabled a patient to walk without limping was satisfactory. He used, in addition to extension in the straight position, an anterior coaptation splint. He agreed with Dr. Agnew in regard to plaster dressings, and under some circumstances would recommend the Nathan R. Smith wire suspension-splint.

Dr. S. H. Weeks had always followed the treatment advocated by Dr. Smith. The forward tilting of the upper fragment he combated by a sand- or shot-bag, and added to the apparatus described a long Liston splint.

Dr. J. A. Comingor stated that he applied immediately to all fractures of the thigh a plaster dressing. The patient was drawn to the foot of the bed, the buttocks being supported by a suitable stand, the fracture was reduced, and while the bone was retained in normal position by manual extension, a plaster dressing was applied enveloping the injured leg and thigh, and ending in a case enclosing the pelvis and waist. At times the sound thigh was taken in. By this dressing swelling was prevented, the fragments were fixed in normal position, the patient could turn in any position in bed, and in two weeks could walk about on crutches. The results were good. Congestion or atrophy never followed, and in case it were desirable to inspect the seat of injury, this could be readily accomplished by slitting up the plaster bandage and springing it open. This has given better results in the speaker's hands than the method of sand-bags and extension. Dr. J. R. Weist and Dr. D. W. Yandell warmly seconded Dr. Comingor's laudation of the plaster dressing.

The afternoon session was closed by a very careful and scholarly paper upon "A Rare Form of Epithelioma of the Upper Extremity," by DR. CHARLES B. NANCREDE, of Ann Arbor. The case described was one in which a long-standing ulceration of the hand underwent epitheliomatous change, requiring amputation. Professor Gibbes made a minute microscopical examination and contributed his report to Dr. Nancrede's paper. The essayist thought that this case went far toward proving the fallacy of Mr. Hutchinson's interesting, but still unproven, theory of arsenical keratosis.

The Wednesday morning session was opened by a paper upon "Surgical Operations for the Correction of Club-foot," by DR. THOMAS G. MORTON, of Philadelphia. He stated that the cause of club-foot is probably dependent upon the same nerve-changes that characterize other forms of infantile palsy. When both extremities are affected the prognosis is unfavorable, since centric changes are so great that complete reduction is often impossible. The amount of deformity depends not only on the extent of nerve lesion, but also upon the period of intra-uterine life in which the lesion occurs. Subsequently the deformity is much increased if the foot is used in walking and if it has been subjected to improper or careless surgical procedures.

The simple cases of congenital varus are amenable to non-operative treatment with possibly section of the tendo-Achillis in some, though this should not be performed until the child is ready to walk. In the complicated cases the difficulty is commonly a displacement of the astragalus forward and of the tibia and fibula backward, owing to the unopposed pull of the calf muscles before the bones have been fully formed. As a result, the astragalus becomes so deformed that no amount of force can replace it, nor will tarsotomy or tarsectomy suffice. When this condition has been still further aggravated by the patient walking upon the displaced foot, complete excision of the astragalus, combined, if necessary, with free section of the soft parts, is the only method which will allow the foot to be unfolded and placed in its normal relation to the leg. At times others of the tarsal bones will have to be removed. The deformity should be over-corrected, then the wound drained with catgut and the foot bound to a right-angled tin splint and not dis-

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turbed for several weeks. Dr. De Forest Willard agreed that excision of the astragalus was safe, easy, and efficacious; its popularity would, however, depend upon ultimate results. The great point is to put a child's foot flat on the ground; this accomplished, the weight of the body with the action of the muscles will insure cure. He believed that this could nearly always be accomplished by the exertion of force without having recourse to the knife; when the latter is used it should be employed subcutaneously as far as possible, to avoid the secondary deformities dependent upon cicatricial contraction.

Dr. C. T. Parkes, of Chicago, stated that he did not think tarsectomy, or any of the cutting operations were necessary. He followed König's method of forcible rupture. Great force was at times necessary, but he had always been successful. After over-correction he immediately applied a plaster dressing, and allowed it to remain for several weeks. At times the treatment had to be repeated. No padding or cotton should be placed beneath the plaster; simply two pairs of stockings, the pair next to the skin of silk. In this way the elasticity of the foot was preserved, while cutting often gave a result but little better than that following a Symes amputation.

DR. W. T. BULL of New York, then read what is probably the most valuable paper yet written upon the results of the radical treatment of hernia. In all, he had operated upon 134 cases, 16 of them being children under fourteen years of age. In this whole series there were but three deaths. In one of the fatal cases strangulation existed at the time of operation.

In four cases the gut was wounded in separating adhesions; no bad results followed this complication. Once the vas deferens was injured and suppurative orchitis followed; the patient, however, ultimately recovered. In about half the cases primary union took place. Where silk was used in the deep sutures, stitch abscesses developed without exception.

He operated on one series of cases by applying a ligature to the neck of the sac, dissecting the latter free and excising it, or if it was very large and adherent draining it. In another series of cases he ligatured and excised the sac and sutured the columns of the rings in close apposition. In still another series, he ligatured and excised the sac, and by a double set of sutures closed the entire inguinal canal. The results show that relapse is as prone to follow the more difficult and tedious methods as is the case in simple ligation and excision of the sac; hence the latter operation should always be preferred. The essayist stated that no operation had yet been devised which satisfactorily stood the test of time. In the large majority of cases relapse was assured. Whether or not the wearing of a truss following operation exerted a favorable influence could not be determined. In the cases where this point had been observed no such influence was noticed. Although there was no prospect of obtaining a radical cure by operation, the surgeon should not hesitate to use the knife under certain circumstances; since the risk to life is very slight and there is nearly always an improvement in local conditions. The circumstances under which operation should be advised are:

1. In children who cannot wear a truss, or in whom no improvement follows after prolonged trial of a truss.

2. In adults who cannot wear a truss, or in whom the hernia is either irreducible or strangulated.

With the ideas of the author of this paper there was practically a unanimous concurrence on the part of the Fellows of the Society.

Following Dr. Bull, a very careful and exhaustive discussion of "Lumbar Hernia" was presented by Dr. C. H. Mastin. The fact, as noted by Mr. Owens, that this form of rupture was not dependent upon the existence of Petit's triangle, was very clearly demonstrated, and interesting photographs of a child suffering from lumbar hernia were exhibited.

The next subject on the programme was "The Propriety of the Removal of the Appendix Vermiformis during an Interval of Recurring Attacks of Appendicitis," by DR. FREDERICK S. DENNIS, of New York. The essayist stated that the objections to this procedure were: 1, the danger to the patient; 2, the difficulty of diagnosis; 3, the liability to subsequent development of abdominal hernia; 4, the lack of evidence that the operation gives permanent relief; 5, the fact that as a result of a relapse immunity may be afforded in the future. As to operation after the first attack, the fact that only eleven per cent. of these cases relapse sufficiently answers that proposition. Even of the eleven per cent. a very small proportion terminate in perforation; and though this most serious and grave of all complications occur, recovery is still possible. Frequently an operator has failed to find the appendix; Dr. Dennis enumerated about twenty different pathological inter-abdominal conditions which had led eminent men into a false diagnosis of appendicitis, as a proof of the difficulty of diagnosis. When the cæcum is the seat of trouble, and a differential diagnosis cannot always be made, an operation on the appendix would, of course, be futile.

Finally, statistics prove that operation upon the second or third day of an acute attack gives a lower mortality than the incision in the interval; hence, save in very exceptional cases, this latter procedure should not be practised.

This paper was carefully discussed by Drs. Joseph Ransohoff, Keen, Parkes, Bull, and M. H. Richardson, the latter reading for Dr. Porter an account of two successful operations performed in the interval between attacks. The feeling was generally expressed that the operation should be recommended only when the attacks were so frequently repeated as completely to cripple a patient, preventing him from pursuing his ordinary calling. The fact that this operation is at times extremely difficult was strongly brought out, and it was agreed that the ultimate results were not always satisfactory.

Following this paper DR. J. RANSOHOFF, of Cincinnati, reported a case of head injury, in which there were no symptoms of intra-cranial bleeding for eight days. Then coma and general muscular twitchings appeared rather suddenly, with dilatation of the left pupil, though the right side of the head was the one upon which external signs of trauma were marked. Guided by the dilated pupil a trephine opening was made over the middle meningeal artery of the left side. A huge firm clot was found, which was only removed by means of the curette. Following the operation consecutive hæmorrhage appeared, which required ligation of the common carotid artery for its control. This was followed by pyæmic

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symptoms and embolic pneumonia. In fifteen days from the carotid ligation recovery seemed fairly inaugurated, when secondary hæmorrhage occurred at this point and the patient perished.

Drs. F. S. Dennis, Keen, and James McCann considered ligation of the carotid an uncertain means of controlling hæmorrhage from vessels of the head, on account of the very free anastomosis. The ligation of the main trunk of the middle meningeal, enlarging the bone opening if necessary, and either passing a tenaculum under the artery and ligating or passing a thread by means of a curved needle was suggested.

Dr. Ransohoff stated, however, that the artery could not be found, that plugging failed to check the bleeding, and that ligation of either the common or the external carotid was the only surgical resource left him.

After an executive session, on Thursday morning DR. W. W. KEEN read his paper upon "Nephrorrhaphy." The subject was handled with even more than the usual clearness which characterizes this author's writings, and formed decidedly one of the best essays of the meeting. The extreme rarity of floating kidney as found in autopsy records was explained on the ground that the pathologist rarely looked for this condition or noticed it unless it existed in an aggravated form. The result of an elaborate statistical search was called in evidence of the fact that looseness of attachment was very generally found in the right kidney of women. Among the evil consequences of non-interference were mentioned hydronephrosis, albuminuria, and uræmia. The diagnosis was usually easy, though little reliance could be placed on the signs afforded by percussion. As to treatment, the first effort of the surgeon should be to retain the kidney in position by means of a band and pad. This failing, nephrorrhaphy or nephrectomy could be considered. Against a mortality of two per cent. for the former stands the formidable death-rate of thirty per cent. for the latter. Then, in case of advanced disease, or when the kidney cannot be replaced, this organ may at times properly be excised. The oblique incision should be practised, excision of a rib not being necessary, and the operator should come upon the perinephritic fat at the outer edge of the quadratus lumborum muscle. When the kidney is not in its normal position the operator may have much trouble in finding it, the liver more than once having been mistaken for this organ. The colon should be carefully observed, then the finger should be carried over the upper border. The assistant should not press the kidney back into its place till after the perinephritic fat is torn through. At times the kidney will have to be drawn into its normal position by means of a vulsellum or tenaculum, or both. The kidney should be secured in its lowest normal position to avoid as much as possible the respiratory movements. It may be anchored by sutures passed through the fatty capsule, through the fibrous capsule, or through the parenchyma, including, of course, both capsules. Finally, the capsule may be stripped off, thus allowing a broad surface for firm adhesion. As far as stitches go, the parenchymatous suture seemed to give the best results. Six stitches were usually made by the operator, and sterile silk, the finest compatible with the requisite strength, was used in preference to catgut, and was left buried in the wound; the latter was left open, and dressed with bichloride or double cyanide gauze. The great after-pain referred to the hip was probably due to disturbance with the ileo-hypogastric nerve. This, if seen, could be resected, and thus an unpleasant complication could be avoided. The patient should not sit up for four weeks. Subsequently an elastic support should be worn, and occupations or amusements calculated to reproduce the condition should be avoided.

There was a general expression of opinion following the reading of Dr. Keen's paper upon the desirability of operating when the symptoms referable to the kidney incapacitated the patient for his ordinary vocations. Dr. Richardson stated that a movable gall-bladder might lead the surgeon to a false diagnosis. He preferred the silk sutures, but usually removed them before complete closure of the wound. Dr. Dennis thought the stitches should include the parenchyma. Dr. L S. Pilcher believed that the removal of a portion of the kidney capsule would afford the highest percentage of cures. Dr. Parkes stated that he did not consider the operation a desirable one. The majority of these operations had been done in times so recent that it was impossible to determine what the ultimate results would be. The kidney substance was so friable that he saw no advantage from including it in the sutures. Dr. Tiffany thought that in some of the reported cases the symptoms were dependent upon a tight capsule, and that relief followed from this condition being relieved rather than from the anchoring of the kidney. Dr. Willard called attention to the importance of producing a broad, deep scar, since it was by this, and not by the stitches, that cure was effected. Dr. McCann preferred silkworm-gut as a suture material. It was never absorbed, and gave no subsequent trouble. The great majority of cases of movable kidney suffered very slight inconvenience from this condition, hence operation would be required rarely. Dr. Keen appended to his paper a table of 134 operative cases, the most complete yet published.

EXECUTIVE SESSION.

On Thursday morning there was an executive session of the American Surgical Association, when Dr. Oscar H. Allis, of Philadelphia; Dr. Arpad G. Gerster, of New York, and Dr. Henry W. Bradford, of Boston, were elected Fellows.

(By Telegraph.)

THE AMERICAN MEDICAL ASSOCIATION.

Forty-first Annual Meeting, held at Nashville, Tenn., May 20, 21, 22, 23, 1890.

The forty-first annual meeting of the American Medical Association opened its session in the Vendome Theatre at 11 o'clock Tuesday morning.

The number of delegates registered was about 950—a smaller attendance than was expected.

The exhibition of drugs, books, etc, was excellent and well arranged, but the exhibition hall was so distant from the chief centres of interest as to limit its visitors to a smaller number than usual.

The hospitality of the citizens is most marked, more personal invitations being extended than can possibly be accepted, but, notwithstanding, desertions from the meetings are rare.

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As might be expected, the hotel accommodations are entirely inadequate, three or four persons being frequently forced to room together, and the service is, naturally, not what it should be.

In the absence of Governor Taylor, Senator T. D. Craighead welcomed the delegates in behalf of the State of Tennessee. He was followed by Mayor McCarven and by Dr. Briggs, the Chairman of the Entertainment Committee.

The President, Dr. E. M. Moore, of Rochester, New York, then delivered his address, dwelling upon the Acts of Congress regarding the subjects of Quarantine, Marine Hospital Service, and Inter-state Quarantine.

The delegates then proceeded to elect the Nominating Committee, Dr. William H. Daly, of Pittsburg, being chosen to represent Pennsylvania.

At 3 o'clock the various sections met in their respective halls, that of Practice of Medicine in the Vendome Theatre, that of Obstetrics and Diseases of Women in separate rooms in the building of the Y. M. C. A.; the other Sections finding accommodation in the various churches and schoolrooms.

SECTION OF PRACTICE OF MEDICINE, MATERIA MEDICA, AND PHYSIOLOGY.

DR. J. H. MUSSER, of Philadelphia, *Chairman.*

The Secretary being absent, Dr. Sawyer moved that Dr. George Dock, of Texas, be elected to fill the vacancy; carried.

The Chairman then called attention to the rules governing the proceedings of the Sections, and delivered his Annual Address, which was of much interest and received great applause. He dwelt upon the effect on the profession of the recent epidemic of influenza, which had so greatly increased the labors of many already overworked men, and had demanded their best judgment and ability. The recent advances made in all branches of medicine were briefly commented upon, and reference made to the increased time and knowledge which modern methods demand of the physician, and which should be recompensed with a proportionate increase of remuneration. The great advantage of trained nurses in the treatment of serious disease was referred to, and the suggestion of the elder Dr. Gross, that training schools for nurses should be established in small towns, was approvingly mentioned. In closing, he urged that a more thorough and exhaustive study of the effect of the older and more familiar drugs should be made, and deprecated the aimless experimentation with the newer remedies that is so characteristic of the day.

DR. DE SAUSSURE, of Charleston, S. C., followed with a valuable paper embodying the results of the clinical study of "Twenty-two Cases of Filaria Sanguinis Hominis."[1] In discussion, Dr. Levering, of Ohio, spoke of the similarity between the symptoms described by Dr. de Saussure and those seen by himself in cases of trichinosis. Dr. Kelly, of Baltimore, described cases of the disease which he had seen in the Johns Hopkins Hospital under the care of Dr. Osler. In closing the discussion, Dr. de Saussure stated that he thought all cases found in the Northern States had a Southern origin, and that but two of his patients had been anæmic. As to treatment, the remedies which check the chyluria he found did not affect the filaria.

DR. C. H. SHEPARD, of Brooklyn, followed with a paper on "Rheumatism and its Treatment by the Turkish Bath," in which the author attributed much of the good effects of this form of medication to the high temperature, which not only increased sweating but had a powerful effect on the germs circulating in the blood. Drs. Ulrich, Didama, Cronin, and Bailey disagreed with the arguments of the speaker, and questioned the advantages of the form of treatment he advocated over those in general use.

DR. J. W. DAVIS, of Tennessee, in answer to a call for volunteer papers, read one on "The Use of Calomel in some Varieties of Dysentery," describing a case of chronic dysentery in which 10 grains of calomel with 2 grains of ipecac effected a cure. This he thought was due to the action of the calomel on the liver. Dr. Dawson said that he thought much of the benefit observed in this case was due to the ipecac, and that one of the most important indications in dysentery was rest. Dr. Ulrich thought that calomel in the case cited would have produced better results if administered *per rectum*. Dr. Woodhull, U. S. Army, mentioned a case in which improvement followed the administration of ipecac in large doses, and Dr. Sloan said that he had obtained admirable results from the injection of a 10-grain silver nitrate solution. Dr. Didama thought that the discussion had wandered from the subject, and with some remarks from the Chairman and Dr. Davis the discussion closed.

The Section adjourned until 2.30 P.M. on Wednesday, leaving several papers unread owing to the absence of the authors.

SECTION OF OBSTETRICS AND DISEASES OF WOMEN.

DR. WILLIAM W. POTTER, of Buffalo, *Chairman.*

In his annual address, the Chairman called attention to the advances which have marked the progress of obstetrics and gynecology during the past year. In the former much had been gained through antisepsis and its effects upon the mother, the child, and upon the puerperal state. In gynecology also the advancement has been great and substantial. Vaginal hysterectomy was deemed the best operation for removal of the cancerous uterus when an operation is indicated. The treatment of uterine diseases and ectopic gestation by electricity, though much lauded, has not accomplished all that is claimed for it, since abdominal section has revealed unchanged conditions in cases which were supposed to have been cured. The subject, however, was considered well worthy of further investigation.

DR. WILLIAM H. WATHEN, of Louisville, read a paper upon "Intraligamentary Cysts," explaining their possible pathological formation and describing their more usual seats. The author advocated enucleation by median abdominal section with complete or partial excision of sac.

DR. HENRY O. MARCY, of Boston, followed with a paper on "The Surgical Treatment of Non-pedunculated Abdominal Tumors," advising removal of as much of the cyst-walls as possible, and suturing the remainder to the abdominal wound, thus closing the general peritoneal cavity. Solid tumors should be treated by ligature or clamp. Complete enucleation has the advantage of

[1] Will shortly appear in THE MEDICAL NEWS.

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leaving no pedicle at the lower angle of the wound. In forming a stump, Dr. Marcy advised separation of the peritoneum for one or two inches from the cyst-wall with division of the pedicle and inversion of the edges by means of double, continuous, tendon sutures. Freshly cut edges are thus inverted, and held away from all possible infection. Then flush the peritoneal cavity and close without drainage. In three or four hours lymph covers the stump, and healing by first intention takes place. Dr. T. A. Reamy, of Cincinnati, discussed Dr. Wathen's paper and approved of the surgical methods advocated by Dr. Marcy.

DR. F. H. MARTIN, of Chicago, then followed with a paper entitled "A Plea for Early Vaginal Hysterectomy for Cancer," in which he advocated vaginal rather than abdominal hysterectomy, because the entire cervix can then be removed, as is not always possible in the latter operation. Drainage is also more perfect, and the operation is not complicated by an abdominal wound. He stated that the mortality of this operation is now less than 15 per cent.

DR. CHARLES A. L. REED, of Cincinnati, next read a paper upon "Primary and Ultimate Results of Vaginal Hysterectomy for Cancer," in which he reported his clinical observations of a series of eleven operative cases, with one death. In two of these cases cancer recurred. Absence of pain in the early history of the case renders diagnosis difficult, but much better results follow if the operation be not delayed. Uterine hæmorrhage depletes the patient and reduces her nervous system so that she cannot bear well the shock of the operation. In such cases the author uses douches of vinegar and the curette for two or three weeks before operating. The wound is packed, not sutured, and the after-treatment consists in rest, warmth, and hypodermic administration of stimulants. The packing is removed in twenty-four hours, and the vagina is washed out with a mild antiseptic solution.

Dr. Dunning, in discussing the foregoing papers, disagreed with Drs. Reed and Martin, maintaining that the operation was too fatal, and that amputation of the cervix should be substituted. Dr. Reamy quoted Dr. August Martin's statistics and those of Schroeder and Leopold, which show a lower mortality in Europe than in America.

The following papers, on account of the unavoidable absence of the authors, were read by title only: "She Supposed it was Her Change of Life," by Dr. A. Vander Veer, of Albany; "Psychical Results of Gynecological Operations," by Dr. J. S. Stone, of Virginia; "Stricture of the Urethra in Women," by Dr. Ely Van de Warker, of Syracuse; "A New Operation for Relief of Prolapse of Anterior Vaginal Wall," by Dr. A. F. Currier, of New York; "Colocystotomy," by Dr. R. B. Hall, of Cincinnati; "Electrical Treatment of Salpingitis and Allied Conditions," by Dr. G. B. Massey, of Philadelphia.

SECTION OF SURGERY.

DR. B. A. WATSON, of Jersey City, *Chairman.*

The Section of Surgery and Anatomy was opened by an address on "Concussion of the Spinal Cord," by Dr. B. A. Watson, of Jersey City. As a result of special study and elaborate experimentation on this subject, Dr. Watson concluded that in nearly all cases of injury to the spinal cord there would be concomitant grave lesions of other parts of the body; a serious injury to the cord is possible, even though there be no demonstrable lesion of the enclosing bones and ligaments, and finally, that unless there were demonstrable lesions of the cord itself, no sequelæ of grave import should be feared. He further stated that no amount of force applied to the anterior part of the body could possibly affect the cord, and that pathological changes were never produced in this portion of the nervous system by the application of moderate force. The importance of these conclusions from a medico-legal point of view was fully discussed. Dr. W. P. King, of Kansas City, stated that Erichsen had done the profession great harm in advancing his theory of spinal concussion, and that in his experience patients, with an object to gain, when complaining of this form of injury, detailed the classical symptoms of Erichsen with great accuracy. Dr. J. H. Murphy, of St. Paul, and Dr. S. F. Carpenter, of St. Joseph, Mo., agreed in the main with the essayist, Dr. Carpenter stating that though injuries to the column were not rare, those of the cord were most exceptional. In closing the discussion, Dr. Watson expressed his entire scepticism of a condition of concussion of either the brain or the cord without recognizable lesions.

The succeeding paper was that of DR. RICKETTS, of Cincinnati, in which some cases of Rhinoplasty were described. The author advised that flaps should be taken preferably from the cheeks; if not from that portion, the arms should be chosen, and finally, that if neither of these regions could supply the new tissue, they should be taken from the forehead. Silk should always be used to suture the soft parts. Wire is preferable for uniting bone. Where resection of bone is required, the deficiency should be made up by sawing from the superior maxilla rather than having recourse to the forehead or hand. In all doubtful cases, an exploratory excision should be made, and the operator should bear in mind the effect that developing teeth sometimes produce on the bone.

Following this paper, DR. C. L. LEWIS, of New York, warmly advocated the use of continuous silk sutures in enterorrhaphy. The method of Ghely, except that the suture was continuous rather than interrupted, was then demonstrated. Increased strength of the suturing and saving of time are the advantages over the ordinary interrupted Lembert suture. In the discussion which followed, Dr. Shimwell, of Philadelphia, stated that the interrupted suture was safer, and more quickly applied than the continued suture, and that increased strength was not required since the bowels were always paralyzed at the seat of operation. Dr. McCoomis, of Maryland, stated that he had used a suture similar to that described by Dr. Lewis more than twenty-five years ago, when an ignorant midwife tied a portion of the small intestine in a congenital umbilical hernia, while ligating what she supposed to be a thick cord. With an ordinary thumb lancet and a needle and thread, which he happened to have with him, Dr. McCoomis opened the belly, resected the gut, did a circular enterorrhaphy and closed the wound. Some years afterward, this child died from an attack of acute intestinal obstruction. An autopsy showed that death was due to strangulation of the colon by a mesenteric rent. The seat of suture was found somewhat contracted, but not sufficiently to produce the slightest obstruction.

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The last paper of the day was read by DR. THOMAS MANLEY, of New York, who reported seven cases of radical operation for hernia performed on children in early infancy. The author expressed the opinion that recommending a truss was a humiliating confession of inability to cope with the disorder, and that in early infancy a truss could rarely be endured, or, if endured, did not efficiently accomplish its object. In discussion, Dr. J. B. Deaver, of Philadelphia, alluded to the fact that a truss in children was not merely palliative, but was often curative; that after all operations a return of the hernia was probable, and that indications for the knife were irreducibility, strangulation, or inability to bear a truss. Of all operations he prefers that advised by Dr. McBurney.

SECTION OF OPHTHALMOLOGY.

DR. S. C. AYRES, of Cincinnati, *Chairman.*

The address of the Chairman called attention to the value of a classified register of the cases encountered in private practice, and advocated the topical use of sublimate solutions.

DR. WM. CHEATHAM discussed the use of jequirity. He preferred it in the form of an impalpable powder, which is more manageable than a solution. Dr. T. E. Murrel, of Little Rock, described a danger in the use of jequirity heretofore unmentioned, viz., the spreading of the inflammation to the lachrymal passages, causing stricture of the duct.

DR. A. R. BAKER, of Cleveland, read a paper on "Functional Nervous Diseases." He found the neurotic tendency to be the real cause of nervous diseases of so-called reflex origin.

DR. GEORGE H. GOODE, of Cincinnati, reported a case of sympathetic inflammation two weeks after enucleation of the injured eye. The case ended in partial recovery.

DR. F. C. HOTZ presented a simple and reliable astigmatometer, based on the apparent shape of a point of light.

The Committee on the Improvement of Census Statistics with regard to Blindness, reported that measures had been adopted by the authorities which, with the aid of the profession, would add much to the value of the returns of this year's census.

SECOND DAY.

The General Session of the American Medical Association met at 10 A. M. The call for the names of the members of the Nominating Committee was made by the Secretary, and the Committee, as completed, was requested to meet in the Watkins Building immediately after the morning session.

The members of the Committee were granted leave of absence during the morning hour. A communication was then read extending an invitation to the Association to hold its next annual meeting at Manitou, Colorado. A discussion touching the workings of the sectional meetings followed, and a resolution was offered to authorize the President to appoint a committee of nine to consider the revision of the working methods of the Association, but the discussion was passed over as not pertinent to the order of business.

DR. N. S. DAVIS, of Chicago, followed with an address on "The Practice of Medicine," the conclusions of which were: If we would reach the highest degree of success in the treatment of acute general diseases, we should keep distinctly in mind the following propositions:

1. As early as practicable the patient should be separated from the further action of both the specific and predisposing causes of his disease by surrounding him with pure air, and as perfect sanitary conditions as possible. As the system uniformly tends either to destroy or eliminate the specific morbific causes by its own metabolic changes, we should carefully avoid the use of such remedies as either directly or indirectly retard or prevent the normal metabolic processes, even for the object of repressing one or more prominent symptoms. On the other hand, we must use such general alterative and antiseptic remedies as are known to sustain and correct such processes, and thereby aid in hastening the destruction or elimination of the disturbing *materies morbi*, whether they consist of living germs, ptomaines or leucomaines, or only excretory matters abnormally retained in the system.

2. As the pyrexia or high temperature results mostly from interference with the processes of heat-dissipation, we must further aid in restoring these processes by gently promoting elimination and the direct abstraction of heat by sponge-baths and, in severe cases, by wrapping in the cold wet sheet. All of these measures exert a restorative influence on the vaso-motor, cardiac, and respiratory nerve-centres. With equal care we must avoid administering such internal antipyretics as diminish heat-production by retarding both blood- and tissue-metabolism, and which also depress nerve sensibility and force.

3. Again, as every specific cause capable of producing the complex assemblage of morbid phenomena that constitutes a general fever has displayed a tendency to induce special local changes in one or more of the important organs during the progress of the general disease, we must early and accurately use remedies that palliate or modify the local developments wherever they may be manifested, and thereby prevent such structural changes as might otherwise end in fatal exhaustion.

4. Finally, as all acute morbid processes, when established, are progressive through the successive stages of increase, culmination, and decline or destruction of the patient, we must carefully adjust our remedial agents and nourishment to the stage of the disease, and to the capacity of the patient to receive and appropriate them. But we must remember that remedies which might be of great value in the first stage, might be injurious or even destructive if used in the stage of culmination, or still more injurious in that of decline. Hence, specific remedies for acute general diseases can be rationally and successfully used only when aimed at the destruction or elimination of the specific causes, and in the first stage of the morbid processes. Indeed, the chief benefits thus far derived from the use of antiseptics and germicides have been as preventives in the incubative and prodromic stages, rather than as curatives after active morbid processes have become manifest.

Dr. Davis said that it required much careful clinical observation, aided by some analytical and experimental work, during the first thirteen years of his professional

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life, to gain a clear comprehension of the foregoing general indications for the management of acute diseases, but since then they have served as a general guide during his forty years of constant practice; and with results that have neither diminished his faith in the efficacy of remedial agents nor the confidence of the community in which he had practised. He did not wish to be understood as persistently using the same remedial agents during the last forty years; but that the correct principles or indications for the treatment of the different stages of any given disease have remained, and always will remain, the same. Our choice of individual remedial agents for fulfilling those indications may be influenced by every addition to our knowledge of etiology, materia medica, and therapeutics.

Dr. Brodie, of Detroit, moved a vote of thanks to Dr. Davis for his very able paper, and the motion was carried.

Dr. Patterson, the Treasurer, in the absence of the Chairman, Surgeon A. L. Gihon, U. S. N., read the report of the Rush Monument Committee. He eulogized Dr. Rush, exhorted the profession to take a more active interest in the work of the Committee by a generous response to the call for funds, and suggested Washington as the most fitting site for erecting the monument.

The Treasurer made the following report:

Received from Dr. J. M. Toner, $1195.69. Contributed since Newport meeting, $310. Total, $1505.69.

Disbursements during year, $17.50. Balance on hand, $1488.19.

Dr. Jones, of Washington, moved that both reports be accepted and printed in the *Journal of the American Medical Association*.

The President announced that Dr. Patterson would receive, upon the stage, contributions toward the Rush Monument Fund.

Dr. J. M. Toner, of Washington, submitted the report of the Board of Trustees of the *Journal* of the Association, which he announced was in a flourishing condition and showed a steady growth in circulation.

Dr. Carl Seiler, of Philadelphia, asked to be informed as to who is responsible for publications appearing in the *Journal*. The Chairman informed him that the *Journal* was an irresponsible publication, and that for many reasons it was impossible to give satisfaction to every one. Dr. Seiler then asked why papers read before the Association at their annual meeting do not always gain admission to the *Journal*, and why articles and papers from other sources enjoyed prior publication.

Dr. N. S. Davis answered that he could not speak officially, being no longer a member of the Board, but that he would try to explain. The *Journal* is limited to eighteen pages for original articles, and the remainder is devoted to reports of societies, etc. If a gentleman read a paper of interest at a local society meeting, the paper and the discussion which followed should be published, in order to make the report complete. It is the endeavor of the Board to raise the standard of the *Journal* as high as possible, and to make it of interest to the contributors. Fifteen or twenty pages a week are as many as a busy practitioner cares to read.

Dr. C. E. Comegys, of Cincinnati, moved that the President appoint a committee of one from each State to further the publication of the *Journal* of the Association.

Dr. J. V. Shoemaker, of Philadelphia, said that he hoped that the meeting would not pass a motion that would virtually be an unkind and unjust criticism upon the work of the honored president and members of the Publication Committee. He said that union and harmony meant the success of the *Journal of the American Medical Association*, and begged of the members to uphold their editors.

Dr. J. M. Keller, of Arkansas, moved that the motion be laid upon the table. The motion was carried.

The consideration of several proposed amendments to the constitution then came up. Dr. Keller moved to repeal the amendment to the constitution which was made two years ago, and that the old rule be reëstablished. This amendment took away from the Nominating Committee the right to elect officers of the Sections, and referred it to the Sections themselves.

Dr. Bell, speaking for the Section of State Medicine, opposed this motion.

Dr. Taylor, of Louisville, said that the great difficulty in the past was the fact that gentlemen often went from one Section to another and frequently voted in more than one. He proposed that every one should register in which Section he proposed to vote.

Dr. Moyer, of Illinois, moved that Dr. Keller's motion be laid on the table. Motion lost.

The question of repeal was then put to vote, and carried by 72 to 61.

The President announced that the motion was carried, but upon an appeal from Dr. Edward Jackson, of Philadelphia, calling attention to the fact that it required a three-fourths vote to amend the constitution, the Chair ruled that the motion was lost.

The morning meeting then adjourned.

SECTION OF SURGERY AND ANATOMY.

The opening paper of the second day's proceedings of this Section was by DR. NICHOLAS SENN, of Milwaukee, upon "Two Cases of Resection of the Cæcum for Carcinoma," with general remarks upon ileo-colostomy for pathological conditions involving this portion of the alimentary canal. Two cases were detailed, in each of which the diagnosis of malignant disease was made only after the abdomen had been opened. In both there was a history of chronic obstruction with intercurrent subacute attacks. In one the cæcum, together with the mesenteric and retro-peritoneal glands, was found involved. Not only the cæcum, but eighteen inches of small intestine were resected. The two ends of the divided gut were then invaginated each within itself, and were occluded by a continuous Lembert suture. Then the continuity of the intestinal canal was restored by means of lateral apposition secured by two moist, decalcified bone-plates. The peritoneal surfaces to be apposed were scarified by means of needle scratches; the threads attached to the plates were tied each to its fellow of the opposite side, and the operation completed by Lembert sutures applied about the periphery of the plates. The patient left the hospital in three weeks entirely well, and has had no recurrence since.

The second case was diagnosed as cancer of the pylorus. A median operation showed that the cæcum was involved, and that, in addition to cancerous degeneration, there was an ileo-cæcal invagination, which was reduced after the application of considerable force.

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The cancer was discovered only after reducing the invagination. The whole involved region was resected, and the continuity of the bowel was restored as in the first case. Peritonitis developed on the third day, and was quickly fatal.

Autopsy showed that the parts were firmly united, and that peritonitis was due to a small ulcer a short distance from the anastomosis. The ulcer had infected the peritoneum. The rings were gone, but the threads still remained at the seat of anastomosis. The union was firm and complete.

Dr. Senn stated that it was a mistake to suppose that a great many sutures were needed to prevent the escape of gas and fæces in such operations. Broad peritoneal surfaces held in apposition for a short time, especially if inflammation and organization were hastened by previous irritation of these surfaces, provided the best protection against infection of the general peritoneal cavity. As a result of experimental work and of his clinical experience, Dr. Senn arrived at the following conclusions:

1. Resection of the cæcum for carcinoma can be done with a fair prospect of permanent cure if the operation is performed before infiltration of the mesenteric or post-peritoneal gland takes place.

2. Ileo-colostomy, with moist decalcified aseptic bone-plates, affords the best method of restoring the continuity of the intestinal tract after excision of the cæcum.

3. Hygroscopic or unabsorbable materials should not be used in the preparation of approximation plates or rings, since the former may cause pressure-gangrene, and the latter may prove a source of danger by remaining as foreign bodies.

4. Ileo-colostomy, without resection of the cæcum, may be performed in cases of obstruction from inoperable carcinoma of the cæcum, irreducible invagination without perforation or evidence of gangrene, and in cicatricial stenosis in the ileo-cæcal region which is not amenable to plastic operation.

5. Scarification of the serous surfaces interposed between the bone plates is the most reliable means of hastening the formation of adhesion and of shortening the process of healing.

6. Resection of the cæcum and ileo-colostomy with or without enterectomy should be performed through an incision extending from the middle of Poupart's ligament to a line drawn from the anterior superior spinous process of the ilium to the umbilicus.

7. Suturing serous surfaces just beyond the margins of the bone-plates renders material service in maintaining apposition between serous surfaces which it is intended to unite, and furnishes additional safeguards against fæcal extravasation.

8. Anchoring the approximated parts in the cæcal region with a mesenteric peritoneal suture should be done in ileo-colostomy after resection of the cæcum.

Before the reading of the next paper, DR. W. T. BRIGGS, of Nashville, asked permission to exhibit a case of persistent erection of the penis, in the hope that some suggestions as to treatment might be elicited. The patient was a lusty young man, and the father of several children. Without known cause he awakened one morning, about a year ago, with an erection which has persisted until now. Absolutely no other nervous symptoms could be elicited. It was suggested that the condition might depend upon clots in the corpora cavernosa, which could be removed by an incision.

DR. HOWARD KELLY, of Baltimore, then described his method of hystero-myomectomy with suspension of the stump in the lower angle of the wound. This method was applicable, he said, where a pedicle could be formed below the tumor. A long incision was made in the linea alba, and the tumor delivered; then, when the pedicle was brought to view, or was formed by enucleation, the rubber ligature was applied, and the masses were removed, leaving one or two inches of pedicle. The neck was divided in a wedge-shaped manner, and the cervical canal dissected out. The raw surfaces were now brought into close apposition by buried catgut sutures, and the peritoneal surfaces by interrupted silk sutures placed deeply enough to include a certain amount of muscular tissue. The ends of the latter sutures were not cut off. All sutures, both deep and superficial, should be drawn tight, and should include all visible bloodvessels. After complete union of all the parts, the rubber ligature was removed, and the edges of the wound inspected. If hæmorrhage appeared, the uterine artery of the corresponding side was ligated by passing a thread around it by a curved needle. Both uterine arteries could be ligatured, if necessary. In performing this ligation the stump was readily managed by means of the long ends of the surface sutures. The drainage-tube was placed well above the stump, and the peritoneum of the latter was united with that of the parietes, suspending the stump from the lower angle of the wound. A gauze dressing was then packed in the superficial wound and around the long silk sutures. The wound rapidly closed by granulations, the silk sutures coming away in about ten days. The advantages of this method are that hæmorrhage is at once detected, the danger of sepsis is, to a great extent, avoided, and only very moderate traction is made on the stump.

In discussion Dr. A. E. Hoadley, of Chicago, was opposed to the use of catgut, since it was not always aseptic. Dr. Martin, of Chicago, described an operation similar to Dr. Kelly's, but differing from it in the fact that the sutured stump was turned into the vagina, forceps being applied which could be immediately tightened in case of hæmorrhage. Dr. Kelly, in reply, stated that catgut was used in the deep sutures because, since suppuration takes place, stitch abscesses would be formed which might greatly prolong convalescence. The large pedicle of many cases of myoma would make the operation of turning into the vagina very difficult.

The next paper read was that of DR. J. B. DEAVER[1] upon the value of the incandescent-lamp urethroscope, in the diagnosis of chronic urethral discharges. The essayist described the mechanism of the instrument, and the appearances presented by the healthy urethral mucous membrane. The evenness with which the urethral walls contract, on withdrawing the instrument, was an important point in making an examination. Certain cases of gleet were quite independent of the existence of stricture, and their nature could be determined only by urethroscopic examination, and by no other instrument could applications for their relief be properly made. A careful classification of the pathological conditions commonly found in the urethra was given, and a number of

[1] Will appear shortly in THE MEDICAL NEWS.

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cases were cited showing the signal value of this instrument in the diagnosis and treatment of obscure and obstinate cases of urethritis.

Dr. B. A. Watson, stated that the instrument was one which required so much skill in its use that there was little chance of its general adoption by the profession.

DR. ROBERT MORRIS, of New York, then read an essay upon the "Value of Peroxide of Hydrogen in Suppuration." He stated that the suppurative process was at once stopped by a thorough application of the drug, and that the parts immediately became sterile, Abscesses became aseptic cavities, and the septic walls of sinuses were sterilized by one application. While bichloride of mercury was a valuable antiseptic when suppuration was fairly established, its power was exceedingly slight compared with that of the drug under discussion. It should be followed by balsam of Peru to encourage granulation.

The final paper of the day was read by DR. EDWARD MARTIN, of Philadelphia, on "Fractures in Children." The results of a careful study of over one thousand cases were detailed, the author stating that the most frequent seats of fractures in children were the radius, humerus, clavicle, and, finally, the femur. The rarity of true epiphyseal fracture was alluded to, the injury being frequently situated near but not at the epiphyseal line. "Green-stick" fracture was also discussed, the statement being made that this was nearly always a true break of the bone fibres, and not simply a bend. The treatment of the most common fractures was considered, and the most satisfactory methods of dressing were described. The essayist was unable to find any report of fracture of the patella in children, and but three instances of fracture of the ribs.

Dr. E. M. Moore, of Rochester, stated that he believed epiphyseal fractures involving the upper extremity of the humerus were more common than was generally supposed, these cases being mistaken for sub-luxations. He described his method of diagnosing and treating the injury.

SECTION OF PRACTICE OF MEDICINE, MATERIA MEDICA, AND PHYSIOLOGY.

The proceedings were opened by a paper of DR. GEORGE FACKLER, of Cincinnati, Ohio, on "Calomel as a Diuretic." After a brief *résumé* of the literature of the subject, Dr. Fackler discussed the various views held as to the mode of action of calomel as a diuretic, and gave the history of some cases to whom it was administered. From observations on these cases he drew the following conclusions: 1. Calomel, and all other mercurial drugs, are diuretic in certain doses and under certain conditions. 2. If given in proper doses, the effect is seen in from two to ten days. 3. The action is most marked in dropsy from disease of the heart, is not apparent in that of hepatic origin, and is uncertain in pathological changes of the kidney. 4. Small doses should not be used. 5. The diuretic action is, in all probability, due to the irritating effect of the mercury on the renal epithelium.

Dr. Olrich corroborated the speaker in regard to the diuretic action of calomel. Dr. Caldwell, of Florida, said he had used bichloride of mercury with muriate of ammonium, and claimed that the combination was more certain than calomel, and less liable to salivate. Dr. de Saussure said he had used bichloride with good results, and also calomel with success, but in larger doses than Dr. Fackler. Dr. Fackler, in closing the discussion, said calomel was, on the whole, better borne by the stomach, and less liable to cause salivation than bichloride.

The discussion on the continued fevers of the South, as announced, was opened by a paper prepared by DR. W. W. JOHNSTON, of Washington, D. C., read by the Secretary. The following conclusions were arrived at: 1. Enteric fever is a rare disease in the South in a typical or intense form. 2. There is probably a change going on in the type of enteric fever—it is losing its typical character and assuming a milder form. 3. Many cases of mild continued fever, which have no well-defined or characteristic symptoms, are cases of mild enteric fever. 4. While malarial continued fevers are found in the South, many so-called cases of "adynamic malarial fever," "remittent fever," etc., are in reality cases of enteric fever. 5. There are no reasons for believing that there is such a disease as typho-malarial fever.

Dr. J. P. Wall, of Tampa, Fla., said he had come to the conclusion through clinical study and post-mortem examination, that the continued fevers in question were all cases of typhoid fever. He did not accept the germ theory of the origin of typhoid fever. Drs. T. J. Happel and J. C. Shephard, of Tennessee, spoke of the continued fevers of that State.

Dr. George Dock, of Texas, said that, while his views coincided on the whole with those of Dr. Johnston, it seemed, in the light of Kinyoun's researches, that we must accept the existence of a combined infection, resulting in the typho-malarial fever of Woodward. He thought it would be well to consider the fevers called catarrhal or inflammatory in some parts of the South, in which malaria seemed not to play a part. In his experience, such cases, on post-mortem examination, showed the lesions of enteric fever.

Dr. Sears, of Texas, said that he had had much experience with continued malarial fever, which often runs into the typhoid state. In his practice all patients who were given quinine recovered though the fever was not reduced. He gave quinine to the amount of two ounces during the course of the disease. Dr. J. H. Vaneman, of Missouri, said that all the fatal cases of unclassified fevers in his practice had been found enteric at the autopsies. He believed that two ounces of quinine were sufficient to kill.

Two papers on typhoid fever followed, one by DR. J. H. VANEMAN, of Kansas City, on "Specific Treatment of Typhoid Fever," the other by DR. HAPPEL, of Tennessee, on the question, "Has Progress been made in the Treatment of Typhoid Fever?"

Dr. H. A. HARE, of Philadelphia, read a paper on the "Treatment of Insomnia and Neuralgia by Butyl-chloral Hydrate."[1]

Dr. Crawford, of Illinois, presented a patient with obscure symptoms and asked for a diagnosis. The Chairman recommended that the secretary appoint a committee to examine the subject and report. A paper by Dr. J. P SAWYER, of Cleveland, followed on "Auto-intoxication from Nitrogenous Elements of Food when taken in Excess."

[1] To appear in THE MEDICAL NEWS.

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On the recommendation of the Chairman a motion was made and carried, that a committee be appointed to investigate the fevers of the South and report next year.

SECTION OF OBSTETRICS AND DISEASES OF WOMEN.

The session was opened by a paper of DR. E. VAN DE WARKER, of Syracuse, N. Y., on "Stricture of the Urethra in Women." Dr. Van de Warker criticises the statement of Dr. Fordyce Barker that the lesion rarely occurs. Dr. A. J. C. Skene differs and believes that stricture near the meatus is frequent and is due to caustic applications for other urethral troubles. Our knowledge of this lesion is slight and we know no more of stricture in the female than was understood of stricture in the male a generation ago. The sound only determines the existence and does not locate the disease accurately. Dr. Van de Warker concluded that a No. 14 or 17 sound will easily pass the female urethra, and that we do not find the small tight strictures in women that are common in men. Retention, incontinence, dysuria are more common in woman than man. Stricture near the meatus may be forcibly dilated by the operator's finger and the stricture may easily be felt and the bladder itself explored. A large stricture causing very painful urination may be cured by digital stretching when a sound will not detect it. The lumen of the female urethra is greatest half-way between the meatus and the bladder. The treatment is painful and cocaine should always be used. The author has seen but few cases of absolute retention, and prefers to call the condition "retarded flow." Another condition met with is extroversion of the lining membrane just within the meatus, which the author considers a form of annular stricture. It appears as a red mass of mucous membrane just without the meatus.

In discussing Dr. Van de Warker's paper, Dr. Currier, of New York, did not agree with the author in his opinion as to the frequency of strictures in women. He detailed cases in his own practice due to toxic causes—one of them to an over-dose of cantharides. He also thought that stricture in the male is not as common as is usually supposed.

Dr. Engelmann, of St. Louis, said that he had not observed strictures in females frequently, possibly because he has not usually searched for them. He asked if they were usually inflammatory. He himself treats strictures by electricity, using a weak sedative current and a non-metallic electrode. He thinks such a current is of more use than dilatation or cutting.

Dr. Reed, of Ohio, stated that he had but limited experience in treating stricture. He uses a self-retaining catheter kept in place during the night. He has seen in one case severe peritonitis follow dilatation.

Dr. Van de Warker, in closing said, in answer to Dr. Engelmann, that the sound assists in causing absorption of the constriction, the self-retaining catheter advocated by Dr. Reed acting in the same manner. He locates the stricture by the olive-point bougie.

A paper of DR. A. F. CURRIER, of New York, upon "A New Operation for the Relief of Prolapse of the Anterior Vaginal Wall" followed, in which the author stated that the causes of the condition may be labor alone, straining at stool, or many labors coming in rapid succession. To cure the condition the vaginal wall must be shortened antero-posteriorly, as well as laterally. The old operations of Sims and Emmet were considered by the author as faulty. His own operation overcomes the defect of the others by making tension in two lines at right angles to each other, cutting out two elliptical-shaped pieces of tissue in the anterior vaginal wall, with their axes transverse. Continuous catgut sutures are used. The result is a right-angled wound. During the operation the bladder must be carefully avoided. Venous hæmorrhage is usually considerable. Iodoform-collodion may be applied, or dressings may be entirely omitted. Primary union is the rule. The author's diagrams were well executed, and clearly demonstrated the various steps in his method. Dr. Van de Warker stated that hitherto no one operation has fulfilled the condition required to effect a cure. The muscular coat atrophies and thus increases the symptoms, and diminution of the sacral curve is often an additional factor. Dr. Currier's operation is the best he has seen. Dr. T. A. Reamy does an operation very similar to Dr. Currier's, only that he removes a little more tissue. Nor does it matter if he opens the bladder, as healing is prompt.

Dr. Johnson, of Danville, Ky., did not think the trouble is in the anterior wall but that the perineum is at fault, and cure of the latter is followed by cure of the former. Dr. Hoffman, of Philadelphia, thought that while opening the bladder is not feared by Dr. Reamy, yet fistulæ may result. Why not, if such an accident happen, excise a part of the bladder? Dr. Engelmann has had an unsatisfactory experience in such troubles, but he did not think his method is at fault. The theory proposed is wrong. Both walls must be denuded and at the proper place. Dr. Kerr, of Tennessee, asked what the position of the uterus was in such cases. Dr. Currier, in closing, said that the tension in his operation is more evenly distributed than in that of Dr. Reamy. He does not claim that it is invariably successful, for any operation will sometimes fail.

DR. E. W. MITCHELL, of Cincinnati, read a report of two cases of "Hyperemesis Gravidarum," which was a clinical history. The usual treatment was adopted, and an ice-bag gave more relief than the other measures. Morphine was given in increasing doses.

A telegram was read announcing the death of Dr. W. H. Byford, of Chicago.

On motion, the Chair appointed the following committee to draft suitable resolutions: Drs. F. H. Martin, T. A. Reamy, and Meacham. Drs. Clarke, of Massachusetts and Jaggard, of Chicago, being absent, their papers upon "Placenta Prævia" were read by title only.

DR. L. N. DUNNING, of Indiana, then read a paper on "Uterus Bilocularis." In this condition the uterine sound reveals the presence of two chambers, and determines whether they are complete or not. Dr. Dunning then reported a case complicating pregnancy which he saw last year. Digital examination revealed nothing at first, but later a second placenta being delivered, the septum could be easily felt. This case, thirteen years previously, had been delivered at term, and when seen by the author was aborting. The death-rate in puerperal women with a double-chambered uterus is $26\frac{9}{10}$ per cent. In some cases when pregnancy occurs in one chamber menstruation goes on in the other.

DR. T. B. GREENLY, of Kentucky, then read a paper upon "Antisepsis in Obstetrics." The author advocates

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uterine douches of carbolic acid solution with external washes of bichloride of mercury during parturition and after it, until the lochia cease. Dr. Currier discussed this paper, maintaining that asepsis was the main thing to be desired. Dr. Hoffman believes that clean obstetrics gives us the lowest mortality, and antiseptics cannot aid if the operator himself be not clean. True antisepsis is only cleanliness. Dr. G. E. Shoemaker, of Philadelphia, advocated cleanliness, and detailed the trouble of obtaining strict cleanliness without an antiseptic agent. He does not believe that it can be secured without some chemical agent.

DR. MEACHAM, of Wisconsin, read a paper upon "The Great Utility of Bleeding in Puerperal Convulsions," detailing a series of fifteen cases so treated, all recovering.

The Committee on Nominations reported the following officers for the ensuing year:

President, Dr. Charles A. Reed, of Cincinnati.

Secretary, Dr. Howard A. Kelly, of Baltimore.

These were elected.

SECTION OF OPHTHALMOLOGY.

Dr. L. Conner, of Detroit, was chosen President, and Dr. T. E. Murrell, of Little Rock, Secretary, for the coming year. DR. G. E. DE SCHWEINITZ, of Philadelphia, reported a clinical study of a series of cases exhibiting slight macular and perimacular changes. In some cases the lesion accompanied eye-strain, in others, a slight transient albuminuria. Vision remained normal throughout.

DR. MURRELL read a paper entitled "Some Observations on the Correction of Low Degrees of Astigmatism," urging the correction of the lowest degrees when they seemed to cause eye-strain.

DR. J. MORRISON RAY, of Louisville, reported a case of transplantation without a pedicle for cicatricial ectropion by Wolf's method. The flap in this case was three by one and three-quarters inches. It subsequently contracted to one-third of this size.

DR. EDWARD JACKSON, of Philadelphia, discussed "Tests of Visual Acuteness and the Standard of Normal Vision." He claimed that the present standard is too low if the test be made with a good light, and he exhibited a more accurate and satisfactory test.

DR. ROBERT TILLEY, of Chicago, reported a case of left lateral homonymous hemianopsia associated with a wound of the occipito-parietal region of the right side of the head. No other cerebral symptoms were present, and the hemianopsia was absolute. Dr. Tilley also exhibited an instrument for the measurement of the radii of curvature of lenses.

DR. C. R. HOLMES, of Cincinnati, reported a case of hæmorrhage after cataract extraction. A similar cataract had been extracted from the other eye two weeks before without accident. Dr. Holmes advocated boric acid and massage in pannus. Improvement was speedily effected when this was added to the ordinary treatment.

SECTION OF DISEASES OF CHILDREN.

Meeting called to order at 3 P. M. by Dr. I. N. Love, of St. Louis. Dr. McThom, of Cincinnati, extended an invitation from the Laryngological Section to the members of this Section, to be present on the following afternoon, and to take part in a discussion on diphtheria, which would then come up. Dr. H. A. Hare, of Philadelphia, moved that the kind invitation be accepted with thanks. (Carried.) The first paper was entitled "The Value of Sulphonal in Children's Diseases," by DR. W. C. WILE, of Danbury, Conn. The practitioner is often at his wits' end to produce rest and quiet sleep, and to control delirium in small children. Opium and bromides are often dangerous, and their use has not given satisfactory results. Sulphonal does not produce bad effects, and can be used with safety. The following case was cited:

A child, aged one and one-half years, was seen while in severe convulsions. Dr. Wile ordered six ten-grain sulphonal powders, and directed that one should be immediately given, to be followed by another in half an hour; following the second dose there was marked diminution in the severity of the attack. The father repeated the dose in one hour. At the end of three hours, as the child was still somewhat restless, another powder was given, and so on throughout the night. In the morning the father came to Dr. Wile and asked for more of the powders. Dr. Wile had not intended that the child should receive more than two or three powders, and was alarmed when he learned that all had been taken. On visiting the case he found the patient in a gentle but profound slumber, which continued for many hours. Upon waking, the patient was free from convulsions, and had no recurrence. We thus see that large doses of sulphonal can, in some instances, safely be given to children.

The next paper was upon "The Value of Atropine in Enuresis," by DR. R. B. JAMES, of New York, which was read by Dr. Cummins in the absence of the author. In 1888, a paper was published bringing to the notice of the profession the value of atropine in the nocturnal enuresis of children, and at the meeting at Newport, in 1889, Dr. W. P. Watson reported a number of cases. Many have resorted to its use, however, without the expected result. The writer has seen many cases lately, and has adopted the following line of treatment: A solution is used of which each teaspoonful represents $\frac{1}{100}$ of a grain. Of this he gives one teaspoonful at 6 P. M., and repeats at 9 P. M. This amount is to be increased until the controlling dose is found, which is usually about six or eight teaspoonfuls. None were benefited with less than two doses. This treatment must be kept up often for months, and then gradually diminished; increasing again should relapse occur. Patients often continued well for a few months after stopping treatment, but almost invariably relapsed.

The author then reported a list of fifteen cases detailing the age, sex, controlling dose, relapse, and result of treatment. In one case only did symptoms of poisoning occur, and these were not alarming. Every case but one was controlled so long as treatment was kept up. Of the fifteen cases, two mild ones were cured, two were benefited, and ten showed no improvement after the drug was stopped. Small doses did not serve to keep up the effect of the controlling dose. In conclusion the writer thinks we have a valuable remedy in atropine to control the evil until the patient outgrows the unfortunate condition. After the age of twelve years atropine seems to have no effect.

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In discussion, Dr. Watson stated that last year, before this Section, he reported thirty unselected cases. Twenty-seven were cured. Two relapsed, but when put on atropine again were cured. The results were remarkable, but more remarkable still is the fact that he has not had the same success since. He confessed that he was unable to explain this. His usual method was to administer a solution containing one grain to an ounce of water, of which as many drops were given at a dose as the child numbered years. In one case the urethra was found very sensitive, and, in addition to the atropine, a No. 2 bougie was used. This was gradually increased to a No. 8 every second day, and was followed by relief; when asked whether this result was due to the atropine or to the bougie, the doctor said he thought it was due to both.

Dr. H. A. Hare said that it was not just to attribute to Dr. Watson the first use of atropine in enuresis, as Dr. Watson had not made such a sweeping claim at any time. We cannot say that atropine is the drug to be used in every case, for many instances are due to causes which cannot be controlled by the drug. Again, atropine has the effect of concentrating the urine, thereby increasing the tendency to incontinence. It would be more rational, therefore, to lessen the concentration of the urine by citrate of potassium or other alkaline diuretics and then begin the use of atropine.

Dr. D. H. Boyde, of Indiana, related his experiences with the assayed fluid extract of belladonna. It relieved almost every case, but they usually relapsed, and he was disposed to think that when relapse did not occur the patient had outgrown the habit. Dr. I. N. Love stated that he had tried the remedy and was favorably impressed by it, but recognized that it could not be used indiscriminately.

The third paper was on "Milk-sugar in Infant-feeding," by DR. E. T. BRUSH. Not long ago, in using Meigs's mixture, he found that the addition of the milk-sugar caused a peculiar change in the color of the mixture. What was in the sugar he did not know, and, unfortunately, a second sample could not be procured. This led him to investigate the subject of sugar in infant feeding. It has been stated and usually believed that sugar of milk is the most harmless substance which can be introduced into the economy. The sugar of milk of commerce is eliminated by most of the excretory organs, whereas the same substance in its natural condition is not so eliminated. He believed that cane-sugar is better as an addition to infant food.

The fourth paper was on "Acute Rheumatism in Children," by DR. F. T. MARSTON, of Boston. The statement that acute rheumatism in children is a rare disease is not well founded. They are subjected to much the same causes as adults, but the disease often presents a different clinical picture. The sero-fibrous structures are often the first affected, and not the joints as in adults. The sheaths of the muscles are sometimes first attacked, as in the case of a boy who had recently come under the writer's notice where the first manifestation was in the calf of each leg. In two days the disease had invaded the general system; endocarditis and pericarditis rapidly ensued and death followed.

Endo- and peri-carditis are often noticed in children before any other manifestation of rheumatism. The temperature does not often rise beyond 102° or 103°, and the fever lasts but a few days. Sweating is not marked, but heart complications occur more often in children than in adults. Pleurisy may be secondary to the pericarditis, but when it occurs alone it must be considered as a direct result of rheumatism. Peritonitis and meningitis are sometimes noticed as sequelæ, and tonsillitis follows in twenty-four per cent. of all cases.

Bronchitis, chorea, and erythema are rare. Anæmia is well marked in most cases in which the heart is involved, and in children we sometimes see the development of fibrous nodules. Regarding treatment, salicylic acid may be called the sheet-anchor, the salicylate of sodium being its most effective compound. Salicin is preferred by some, but it is often necessary to give it in larger doses than the stomach will tolerate.

It is often advisable to add an alkali during the administration of salicylates. The treatment of the various symptoms was then taken up and ably considered. The next paper—"Feeding the Young," by DR. PHELPS, of California—was read by Dr. Cutler, of Boston. This paper dealt with the common mistakes made by parents in feeding their infants. The discussion which followed bore for the most part on the importance of obtaining in some way a pure milk supply for our large cities. The question of the methods of sterilizing milk also received due attention.

THIRD DAY—GENERAL SESSION.

William T. Briggs, M.D., of Nashville, was elected President for the ensuing year, Wm. B. Atkinson, M.D., Secretary, and Richard J. Dunglison, M.D., Treasurer.

Washington was chosen as the city in which the meeting of 1891 would be held.

(*By Telegraph.*)

THE MEETING OF THE ASSOCIATION OF MEDICAL EDITORS.

ON Monday evening, May 19th, the meeting of the Association of Medical Editors was called to order at 9 o'clock at Nashville, Tenn.

The President, Dr. I. N. Love, of St. Louis, took the chair. After making his annual address, he appointed the following Committee on Credentials and Nominations for Membership: Dr. W. C. Wile, of Connecticut; Dr. J. D. Fulton, of Kansas; and Dr. J. V. Shoemaker, of Pennsylvania.

A paper upon the "Relations of Medical Editors to the Profession at Large," by Dr. F. L. Sim, of Memphis, was read.

An interesting paper upon the "Progress of Medical Literature" was read by Dr. T. D. Crothers, and ably discussed by Dr. N. S. Davis, of Chicago, the founder of the Association.

The Nominating Committee then reported the following officers for the ensuing year: For President, Dr. F. L. Sim; for Vice-President, Dr. Frank Woodbury; for Secretary and Treasurer, Dr. J. C. Culbertson; who were unanimously elected.

The Association then adjourned to partake of the annual banquet.

The following gentlemen were elected to membership: Drs. A. K. Hills, Ferdinand King, B. W. Palmer, G. F.

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Lydston, B. Lewis, J. F. Dickman, R. Aickman, R. W. C. Hill, W. C. Shenck, J. E. Minning, J. H. Thompson, W. H. Daly, C. S. Briggs, A. S. Morrison, and H. C. Wyman.

NEWS ITEMS.

Crusade Against Quacks in Italy.—The Italian governmental department having supervision over medical matters has inaugurated vigorous measures for the prevention of irregular practice throughout the kingdom. The Minister of the Interior, as he might be called, has recently sent out instructions to all prefects calling upon them to furnish at the beginning of every month a list of all the cases in their respective districts upon whom unauthorized persons have attempted to practise.

The Yale Home Hospital.—It is proposed by Dr. Seaver, of New Haven, to erect a students' hospital at Yale College. The annual attendance of students has now increased to such proportions that there are always more or less sick ones who need better attention than it is possible for them to obtain in their own rooms. The college physician estimates that the initial running expenses can be met by a fund which will yield $700 or $800 per annum in addition to such moderate charges as can be paid by the invalid students who are brought to the hospital.

Fees of Medical Witnesses.—The fee allowed in Great Britain to medical witnesses in courts of law is one guinea for every day's attendance at trials in the Supreme and County Courts, with travelling expenses. In the lower or police magistrate courts the fee is half a guinea.

Corrigendum.

THE MODERN TREATMENT OF VESICAL CALCULUS IN MALE CHILDREN.

The paper of Dr. J. William White, which appeared in the last issue of THE MEDICAL NEWS, was incorrectly stated in a footnote to have been read before the American Surgical Association.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 13 TO MAY 19, 1890.

WOOD, LEONARD, *First Lieutenant and Assistant Surgeon.*—Having completed at New York City the duties assigned to him in S. O. 29, April 30th, Division of the Pacific, will return to his station in that Division. Is granted leave of absence for one month.—Pars. 19 and 10, *S. O. 115, A. G. O.*, May 16, 1890.

By direction of the Secretary of War, LEONARD Y. LORING, *Major and Surgeon*, now on sick-leave of absence until further orders, is relieved from duty in the Department of Arizona.—Par. 14. *S. O. 115, A. G. O.*, May 16, 1890.

By direction of the Secretary of War, WILLIAM H. FORWOOD, *Major and Surgeon*, is relieved from duty at Fort Snelling, Minnesota, and will report in person on the 27th inst to the Governor of the Soldiers' Home, District of Columbia, for duty as Attending Surgeon at the Home.—Par. 11, *S. O. 113, A. G. O., Washington, D. C.*, May 14, 1890.

By direction of the Secretary of War, HENRY M. CRONKHITE, *Major and Surgeon*, is relieved from station at Little Rock Barracks, Arkansas, and assigned to duty at Fort Lewis, Colorado, at which post he is now on temporary duty.—Par. 10, *S. O. 113, A. G. O., Washington, D. C.*, May 14, 1890.

By direction of the Secretary of War, CHARLES F. MASON. *First Lieutenant and Assistant Surgeon*, now on leave of absence, will report in person to the commanding officer of Fort Logan, Colorado, for temporary duty at that station.—Par. 7, *S. O. 113, A. G. O., Washington, D. C.*, May 14, 1890.

By direction of the President, the Army Retiring Board convened at Fort Leavenworth, Kansas, by War Department Order dated May 10, 1887, published in Special Order No. 107, May 10, 887, from Headquarters of the Army, is dissolved, and War Department Order dated April 26, 1890, published in Special Order No. 99, April 28, 1890, from Headquarters of the Army, directing John de B. W. Gardiner, Captain and Assistant Surgeon, to report to the President of the Board for examination, is revoked.—Par. 10, *S. O. 111, A. G. O., Washington, D. C.*, May 12, 1890.

By direction of the Secretary of War, CHARLES B. EWING, *Captain and Assistant Surgeon*, is relieved from duty at Washington Barracks, District of Columbia, and will report in person to the commanding general Department of the Missouri, St. Louis, Missouri, as Attending Surgeon at those headquarters.—Par. 8, *S. O. 110, A. G. O., Washington, D. C.*, May 10, 1890.

By direction of the Secretary of War, leave of absence from June 1st, to include October 10, 1890, is granted ANDREW V. CHERBONNIER, *Captain and Medical Storekeeper.*—Par. 4, *S. O. 110, A. G. O., Washington, D. C.*, May 10, 1890.

By direction of the Secretary of War, leave of absence for four months, with permission to go beyond the sea, to take effect on or about June 1, 1890, is granted CHARLES C. BYRNE, *Lieutenant-Colonel and Surgeon.*—Par. 3, *S. O. 110, A. G. O., Washington, D. C.*, May 10, 1890.

By direction of the President, and in accordance with Section 1246, Revised Statutes, an Army Retiring Board is appointed to meet at the War Department in this city, at 11 o'clock A.M., on Wednesday, May 14, 1890, for the examination of such officers as may be ordered before it. Detail for the Board: ANTHONY HEGER, *Lieutenant-Colonel and Surgeon*; CHARLES R. GREENLEAF, *Major and Surgeon.*—Par. 6, *S. O. 110, A. G. O., Washington, D. C.*, May 10, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING MAY 17, 1890.

MACKIE, B. S., *Surgeon.*—Ordered to the Practice-ship "Constellation," May 15th.

LOWNDES, C. H. T., *Assistant Surgeon.*—Ordered to the Practice-ship "Constellation," May 15th.

FITZSIMONS, PAUL, *Surgeon.*—Detached from the U. S. S. "Marion," and ordered home.

MARTIN, H. M., *Surgeon.*—Granted six months' leave of absence, with permission to leave the United States.

HORWITZ, P. J., *Medical Director.*—Granted nine months' leave of absence, to leave the United States

WENTWORTH, A. R., *Passed Assistant Surgeon.*—Resignation accepted, to take effect November 14, 1890.

HERNDON, C. G., *Passed Assistant Surgeon.*—Detached from the U. S. S. "Enterprise," and wait orders.

GIHON, A. L., *Medical Director.*—Appointed Delegate to represent the Medical Department of the Navy at the International Medical College, Berlin, Germany, August 4, 1890.

KINDLEBERGER, DAVID, *Medical Director.*—Appointed Delegate to represent the Medical Department of the Navy at the International Medical College, Berlin, Germany, August 4, 1890.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FROM APRIL 21 TO MAY 10, 1890.

HUTTON, W. H. H., *Surgeon.*—Detailed as Chairman of the Board for Physical Examination of Officers of Revenue-Marine Service, April 23, 1890. Detailed as Chairman of the Board for Physical Examination of Cadets, Revenue-Marine Service, May 9, 1890.

PURVIANCE, GEORGE, *Surgeon.*—Detailed as Recorder of the Board for Physical Examination of Officers of the Revenue-Marine Service, April 23, 1890.

BROOKS, S. D., *Passed Assistant Surgeon.*—When relieved at Savannah, Ga., to proceed to Cleveland, Ohio, and assume command of the Service, May 1, 1890.

CARRINGTON, P. M., *Passed Assistant Surgeon*—As soon as physically able, to proceed to Savannah, Ga., and assume command of the Service, May 1, 1890. Leave of absence extended twenty days on account of sickness, May 3, 1890.

MAGRUDER, G. M., *Assistant Surgeon.*—Detailed as Recorder of the Board for Physical Examination of Cadets, Revenue-Marine Service, May 9, 1890.

KINYOUN, J. J., *Assistant Surgeon.*—To proceed to Wilmington, Del., on special duty, May 6, 1890.

CONDICT, A. W., *Assistant Surgeon.*—Granted leave of absence for eight days, April 12 and 22, 1890.

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVI. SATURDAY, MAY 31, 1890. NO. 22.

ORIGINAL ARTICLES.

ANTISEPSIS IN MIDWIFERY.[1]

BY WILLIAM T. LUSK, M.D.,

PROFESSOR OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN IN THE BELLEVUE HOSPITAL MEDICAL COLLEGE, NEW YORK.

ON a former occasion I found from an examination of the records of the Health Department of New York City that the reported number of deaths from puerperal sepsis, between the years 1867 and 1875, in New York City, was 1947, or an annual average of 215.5. In the appended table, prepared for me from the same sources by my friend Dr. Rutson Maury, it will be seen that for the five years from 1885 to 1889, inclusive, the deaths from puerperal sepsis reported were 1105, or an annual average of 221. The population of New York in 1870 was 942,292; in 1875, 1,169,305; in 1885, 1,553,730; in 1890, 1,755,292. It will be seen, therefore, that the ratio of deaths has by no means kept pace with the increase of the city's population.

A portion of this betterment is doubtless attributable to reforms in the management of our lying-in hospitals. Whereas, formerly these institutions furnished nearly one-sixth of the fatal cases of puerperal sepsis, they now, when properly equipped and organized, afford the safest places of refuge for parturient women. There has likewise been, without doubt, an improvement in results among the well-to-do classes. Among these there is a widely diffused belief that puerperal fever is a preventable disease, and that for its occurrence the physician should be held responsible, and this leads to greater painstaking on the part of the latter, even when he is disinclined to accept the deductions from modern scientific teaching. Among the poor, in their own homes, I do not believe that the dangers of childbed have been perceptibly lessened.

How serious is the question under discussion is shown by Dr. Maury's table, where it appears that, even in the past five years, one-tenth of the deaths in women between the ages of fifteen and forty-five are due to causes connected with childbirth, and that one-twentieth of the deaths among women in the childbearing period are due to puerperal sepsis.

The following record will show how important have been the changes effected by modern methods in our lying-in institutions: In the year 1873 there were 449 births in Bellevue Hospital; there were 25 maternal deaths, 15 of which were the result of septic infection. The proportion of one death from sepsis to thirty cases of childbirth was at that time the usual one in the maternities of this country and of Europe, reported differences being rather of book-keeping than of fact. There was always, likewise, a large unreckoned contingent of patients with pelvic inflammatory troubles which ended in recovery. In 1874, between the 1st of January and the 11th of June, of 166 patients confined 31 died of puerperal fever. Similar fatal epidemics were at that time of not infrequent occurrence in the best appointed maternities.

The first attempted reform consisted in the erection of wooden pavilions on Blackwell's Island for the reception of the lying-in service. This move was the work of non-professional enthusiasts, and was the outcome of the prevailing opinion that a mysterious efficacy resided in wooden walls. The death-rate, however, speedily rose to a higher average than had previously existed at Bellevue; the wooden pavilions were abandoned, and the reign of inspiration ended.

With the transfer of the maternity to Blackwell's Island it became necessary to provide for the cases, sufficiently numerous, who seek hospital care after labor has actually begun. At first special arrangements for their reception were made with private institutions, but after a brief trial the latter refused, in justice to their other inmates, to admit such emergency cases, on the plea that it was impossible to receive them and keep their wards free from infectious diseases. Thereupon orders were issued by the commissioners that the patients should be taken on board the Blackwell's Island steamboat, there to be kept until they could be transferred by the regular trips, which took place twice daily, to the Island maternity. Of necessity, many women were confined in the steamer cabin, especially during the night. No adequate provision was made for their comfort. Protests against the inhumanity of this arrangement received no attention, until, finally, in the winter of 1877–8, a patient died of cold, and became the subject of investigation by the grand jury. As a final outcome of the agitation which followed, an engine-house belonging to the old fire department was fitted up for urgent cases, under the name of the Emergency Hospital. It contains a sitting-room, a laundry and kitchen, a room for con-

[1] Read before the Association of American Physicians, May 13, 1890.

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TABLE I.—DEATHS OCCURRING IN NEW YORK, BETWEEN THE YEARS 1867 AND 1875, INCLUSIVE, FROM METRIA, EXCLUDING OTHER CAUSES, WHICH PROVED FATAL DURING THE PUERPERAL PERIOD.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept	Oct.	Nov.	Dec.	Total deaths from metria.	Total from all causes.
1867	16	10	14	16	12	5	6	8	5	5	9	14	120	238
1868	17	14	27	16	18	9	12	8	7	3	8	12	151	267
1869	25	26	18	10	15	14	12	15	8	12	16	19	190	312
1870	12	17	37	27	20	10	12	16	10	12	11	17	201	333
1871	21	30	22	25	26	17	11	13	7	7	12	23	214	399
1872	26	37	41	40	27	21	14	24	13	14	18	32	307	503
1873	33	40	32	39	29	22	16	15	13	11	23	12	285	431
1874	19	32	24	33	34	21	18	15	10	7	7	25	245	439
1875	28	28	40	30	22	17	10	10	5	11	14	19	234	420
Total . . .	197	244	255	236	203	136	111	124	78	72	118	173	1947	3342

TABLE II.—STATISTICS DERIVED FROM THE RECORDS OF THE NEW YORK BOARD OF HEALTH BETWEEN THE YEARS 1885 AND 1889, INCLUSIVE.

Year.	Total number of female deaths from any cause.	Total number of female deaths between 15 and 45 years of age—any cause.	Total number of reported births (including still births).	Total number of deaths from puerperal causes, eclampsia, hæmorrhage, sepsis, abortion, extra uterine pregnancy, etc.	Total number of deaths from sepsis, puerperal fever, metritis, pyæmia, etc.	Percentage of septic to puerperal deaths.	Ratio of deaths in pregnancy and childbed to entire number of female deaths.	Ratio of deaths in pregnancy and childbed to female deaths between 15 to 45 years.	Ratio of septic deaths to entire female deaths (all ages).	Ratio of septic deaths to female deaths, 15 to 45 years of age.	Ratio of puerperal deaths reported births (with still-births).	Ratio of septic deaths to reported births.
1885	16,766	4,400	33,000	395	223	56⅝	1 in 42½	1 in 11⅛	1 in 75	1 in 19⅘	1 in 83½	1 in 152⅛
1886	17,082	4,307	34,369	384	199	51¾	1 " 44½	1 " 11¾	1 " 85¾	1 " 21	1 " 89½	1 " 173
1887	17,936	4,459	37,123	360	202	56	1 " 50	1 " 12½	1 " 88⅘	1 " 22	1 " 103	1 " 183½
1888	18,617	4,650	39,375	442	251	56¾	1 " 42	1 " 10½	1 " 74	1 " 18½	1 " 89	1 " 147⅘
1889	18,390	4,644	41,867	430	230	53½	1 " 42¾	1 " 10⅘	1 " 80	1 " 20	1 " 97½	1 " 182
Total	88,791	22,270	185,734	2011	1105	55	1 in 44	1 in 11	1 in 80½	1 in 20	1 in 92⅓	1 in 168

finements, and a ward containing six beds. The visiting staff consists of Dr. Polk and myself. The attendance is derived from the interne service on the medical side of the Bellevue Hospital.

I have ventured to offer these particulars because there is no pretence that the Emergency is a model for imitation. It has no fans for ventilation; no provision for a rotation of wards. It is intended for the homeless class. It receives constantly women with high temperatures due to infection before their entrance, or who have been days in labor, or who have been subjected to unavailing attempts at artificial delivery by outside physicians. It therefore furnishes an excellent test of the value of modern antiseptic methods. During the past five years there have been 837 women confined within its precincts, and there have been 16 deaths, *i. e.*, nearly 1 to 82. A glance at the record shows that these cases are the best illustrations of the difficulties with which the institution has to contend, and of the value of the antiseptic principle.

Thus, there were 5 deaths from eclampsia. The patients were all sent to the hospital after the convulsions had gained full headway.

One was a case of placenta prævia. The labor had been lengthy and the hæmorrhages profuse before the patient was admitted.

One was a case of Cæsarean section, performed on account of the obliteration of the cervix and vagina by cancer.

A patient was sent to the Emergency in labor, with delirium tremens. She died twenty-four hours after delivery.

There were two deaths following version in neglected shoulder presentations. Both women had been in labor several days previous to admission. The children were dead, and decomposition had set in.

In two cases the women had been respectively two and one-half and four days in labor when admitted. The children were dead. There was a stinking discharge and commencing decomposition of the fœtus.

In two cases the high-forceps operation had been performed surreptitiously by unqualified persons.

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In both instances the lower uterine segment was ruptured, and death speedily followed.

In a twin pregnancy, where one child was delivered by forceps and the second by version after a long labor, death occurred from septicæmia.

There remains one other case, concerning which no record has been preserved.

Thus, of the 16 deaths, 1 or possibly 2 can be construed as due to puerperal fever.

Now, the regulations by which these results have been obtained are comparatively simple. The patient, on her entrance into the hospital, receives a full bath. A rectal injection is given. The lower abdomen, the inner surfaces of the thighs, the pudenda, and the anus are scrubbed with soap and water, then washed with plain water, and finally cleansed with a 1 to 1000 solution of corrosive sublimate. The vagina is first douched with soap and water and then with a 1 to 5000 solution of corrosive sublimate. In operative cases these douches are repeated before and after the introduction of the hand or instruments. The Bellevue Hospital internes, while on duty, are not permitted to visit the dead-house or the erysipelas pavilion. They are not allowed to assist at surgical operations nor to take part in the dressing of wounds. When in attendance upon a case of labor both interne and nurse wash their hands and forearms with soap and water, with pure water, and with corrosive sublimate solution (1 : 1000). Before an internal examination is made the hands are freshly washed with the bichloride solution. Infrequent examinations are recommended. Instruments are placed in a 2 per cent. solution of carbolic acid. After they have been used they are boiled and polished for future service.

The Credé method of expelling the placenta is employed. Ergot is given to secure good uterine contractions. In all cases after labor the vagina is douched with the bichloride solution (1 : 5000). In cases of protracted labor, of high-forceps operation, of version, or of any manipulations by means of which air is admitted to the uterine cavity, the douche, after preliminary vaginal irrigation, is extended to the uterine cavity. The external parts are then dusted with iodoform, and are covered with a piece of gauze freshly wet with bichloride solution (1 : 5000). Outside is placed a pad of oakum. The dressing is changed once in six hours, at which time the genitals are scrupulously cleansed. During childbed no vaginal douches are given.

In the main the plan of treatment carried out is that introduced by Garrigues at Charity Hospital five years ago. Its success is attested not only by the absence of deaths due to septic infection, but by the morbidity in the wards. The temperatures rarely rise above 100½°, and, as a rule, do not reach 100°. But the plan of treatment presupposes intelligent instruments. For us these are supplied, on the one hand, by the training-school for nurses; on the other, by the hospital interne, who enters upon his duties thoroughly familiar with the requirements of surgical cleanliness. The occasional appearance on the scene of an individual who uses his "common sense"—*i. e.*, one who does not believe there is any harm in witnessing an autopsy, or in visiting a companion in the erysipelas ward, or in holding the pus basin in an operation for pyo-thorax—is almost certainly followed by temperature elevations, which add fresh testimony to the efficacy of a rigid observance of antiseptic regulations.

It is, however, to be acknowledged that there is by no means unanimity among authorities in relation to certain of the rules prescribed. Thus, the pad to the vulva is sneered at by many as savoring of the heresy that the air can become the source of contagion. For my own part, I believe an antiseptic dressing and pad are of immense service in hospital practice, where patients are aggregated together, as a means of preventing the decomposition of the lochia. The latter is inevitable upon the external parts when the ordinary napkin is employed. It seems to me incontrovertible that the air does thereby become contaminated, and it is doing violence to the evidence to deny the pernicious influence of a germ-laden atmosphere upon puerperal wounds. The argument that such an admission has a tendency to weaken the personal responsibility of the physician is childish. Aside from the fact that science is based upon truth, and not upon teleological considerations, the belief in a twofold origin of puerperal fever simply doubles his responsibility. To be sure, Leopold[1] found that of 427 patients in the Dresden Maternity who had not been examined or treated with corrosive sublimate previous to confinement only 7 had a rise of temperature, and this fact taken by itself would seem to indicate that direct contact alone is capable of producing infection. But these patients were confined under favorable sanitary conditions. Szabo,[2] on the contrary, during an epidemic of fever in the Pesth maternity, gave orders that no examinations should be made. Of 90 patients confined under these conditions more than one-third had febrile disturbances; and 2 of the patients, upon whom, in the one case, sutures, and in the other, serres-fines, were employed for perineal laceration, died. The researches of Ott[3] and Thomen[4] show that in healthy women the bacteria con-

[1] Leopold: Dritter Beiträg zur Verhütung der Kindbiltfiebers. Archiv f. Gynäkologie, vol. xxxv. p. 149.

[2] Szabo: Zur Frager der Selbstinfection. Ibid., vol. xxxiv. p. 153

[3] Ott: Zur Bacteriologie der Lochien. Ibid., vol. xxxii.

[4] Thomen: Bacteriologische Untersuchungen Normaler Lochien, etc. Ibid. vol. xxxvi. p. 247.

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tained in lochia are found, not in the upper portion of the vagina, but near the introitus, which would certainly indicate that they are ordinarily derived from external sources. At any rate, since the use of the pad at the Emergency Hospital it has been possible to do away with the old-time rotation of wards, and the febrile temperatures, which once were so marked a feature of the winter months, when the windows were closed, are now no longer observable.

The subject of prophylactic douches during labor has likewise been one of endless contentions. Their employment at the Emergency has not, however, been the result of theory, but has been the outcome of the condition of the patients admitted, most of them having been examined previously by not over-fastidious midwives or physicians.

The differences which divide obstetrical authorities concerning the ante-partum douche is not so much the result of conflicting experiences as of doctrinal convictions. Thus, Barnes, Ahlfeld, Kaltenbach, and others, have shown that, in spite of every pains taken to exclude contact-infection, temperature elevations will occasionally occur in childbed. These febrile disturbances they regard as the product of a *materies morbi*, existent in the genital canal prior to labor; or, to use a term which at present is not only a designation, but a war-cry, such cases are due to auto-infection. It is a matter of common agreement that in severe cases of puerperal infection the utero-vaginal canal swarms with bacterial forms, and that of these the streptococcus pyogenes is the most certain accompaniment of specific inflammatory troubles. When convalescence sets in the coccus forms correspondingly disappear from the lochial discharges. But the vagina at all times contains a varied assortment of bacterial germs. Nothing would seem simpler, therefore, than the deduction that these germs are always potential sources of evil. As a logical outcome of this doctrine its extreme supporters insist upon a complete sterilization of the vagina in every case of labor as an ordinary prophylactic precaution. Thus, Steffeck[1] advises the irrigation of the vagina during labor, at two-hour intervals, with a litre of corrosive sublimate solution. To increase its efficiency he introduces two fingers into the vagina to scrub, during the douche, first, the vaginal mucous membrane, and then the interior of the cervix. Döderlein[2] recommends that the vagina be first rubbed thoroughly with a preparation of creolin and mollin and then be irrigated for ten minutes with a creolin solution.

Fortunately, these suggestions, which would have a tendency to handicap fatally the employment of antiseptic measures in midwifery, have not been received with much favor, even by the partisans of the doctrine of auto-infection. But, on the other hand, the pathogenic character of the germs contained in the vagina has been disputed. Thus, Artemieff[1] says that "the lochia of perfectly healthy puerperal women contains no microörganisms." Bökelmann[2] maintains that a healthy, normal puerperal woman is *à priori* to be regarded as aseptic. He objects to attempted sterilization on the ground that the measures employed mechanically delay the progress of labor by the removal of the normal vaginal mucus, and at the same time render more vulnerable the tears, the excoriations, and the surfaces from which the epithelium has been detached.

Kaltenbach,[3] although a defender of auto-infection, states that in easy, rapid births the germs are carried away by blood, amniotic fluid, and the passage of the child; but in tardy labors, or in case of the premature rupture of the membranes, the entrance of germs into the uterine cavity is facilitated, and many may remain in the uterus and become a source of danger. Diseases resulting from auto-infection are lighter in character than those due to inoculation. Infection is first preceded by putrefaction. A complete destruction of germs is unnecessary; those that remain *in utero* are rendered harmless by ordinary injections. Even Winter states that in the present condition of our bacteriological investigations it is not right to carry out the attempts at complete sterilization recommended by Steffeck and Döderlein.

In private practice, under ordinary conditions, the presence in the vagina of infectious forms of bacteria is hardly conceivable, except in cases where they have been directly imported by the finger or by instruments. This statement is based both upon microscopic investigations and upon clinical experience. So far, it has not been possible, in the rare instances where beaded cocci have been found in the vaginal secretions, ante-partum, to obtain by pure cultures a product capable of giving rise to spreading inflammations; and in rural districts, even with not over-cleanly surroundings, immunity from infectious puerperal diseases is the rule. That, however, the vagina, which is not a hermetically closed tube, should, like the atmosphere, contain germs capable of producing putrefaction is hardly doubtful. Under healthy conditions the uterine cavity, on the contrary, contains no bacterial forms, and it is not invaded by them in normal parturition, a fact attributed to their feeble migratory power and to the downward current of the secretions. Condi-

[1] Steffeck: Ueber Disinfection der weiblichen Genital-canals. Zeitschrift für Geburtskunde, vol. xv. p. 395.

[2] Döderlein und Günther: Disinfection des Geburts-canals. Archiv lür Gynäkologie., vol. xxxiv. p. 111.

[1] Artemieff: Micro- und bacterioscopische Untersuchungen der Lochien. Zeitschrift f. Geburtskunde, vol. xvii. p. 174.

[2] Bökelmann: Die Antisepsis während der Geburt. Ibid., vol. xvii. p. 341.

[3] Kaltenbach: Archiv f. Gynäkologie, vol. xxxv. p. 489.

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tions which favor the passage of germs from the vagina into the uterus are relaxation of the uterine walls and membranes hanging from the cervix. The increased morbidity which accompanied the once popular vaginal douche in childbed was doubtless owing to the circumstance that, while of feeble disinfectant power, the injected stream furnished in many instances a direct highway to the uterine cavity. True midwifery antisepsis consists not so much in douching as in furthering physiological processes. Under normal circumstances a proper handling of the patient in the third stage of labor will effect more in the way of prophylaxis than the most effective germ-destroying agents. When, however, hands or instruments are introduced into the uterine cavity, the case is different. It would be hardihood then not to precede the operative measure by thorough vaginal disinfection.

In private practice too great pains cannot be taken with the sanitary surroundings. The sheets and the napkin or pad to the vulva should be matters of personal supervision. Slovenly laundry work is dangerous. I prefer the pad because it is destroyed after having been once in use. The employment of napkins which have been left in a pail until putrefaction is well advanced, and are then soaked and dried before the fire by the monthly nurse, is a familiar procedure, and a direct temptation of Providence.

In city homes close inquiries should be made in reference to the condition of closets and sewer connections. My attention was first drawn to the similarity of typhoid and septic fever in puerperal cases by a patient sent to the hospital in a moribund condition. Her child had been removed by a high-forceps operation, and the cervix was badly lacerated. I regarded her symptoms as typical of puerperal fever, but the post-mortem examination showed a perfectly healthy condition of the pelvic organs and the characteristic intestinal lesions of typhoid. During the past few years of low water-supply in New York I have many times been called to see patients with high fever who were undergoing the customary douchings, while in the adjoining closet the basin into which the dejecta of the patient were being thrown was washed out once or twice daily by a pitcher of water poured into the basin by hand. The dangers of defective house sanitation have been ably presented by my friend Professor Playfair, and I find it difficult to understand the attitude of those who find no harm in the condition I have described because, they say, it does not affect the drinking-water.

A physician from the country called upon me to consult me about an epidemic of puerperal fever in his practice. I asked him many questions, but received no enlightening answer as to the cause. The physician was intelligent, and had seemingly taken every needful precaution. As he was about to leave me I inquired whether there was any diphtheria in his neighborhood. He answered, he had "lots of it," and seemed surprised that I should connect the diphtheria and puerperal fever together. It seems to me a thoroughly false idea that a physician can attend erysipelas, diphtheria, and scarlet fever, and at the same time pursue his midwifery practice with impunity, provided he makes free use of corrosive sublimate and carbolic acid. Indeed, I am almost disposed to regard as a special form of blindness the prevalent faith that parturient and puerperal women can only be infected by the finger and through the vagina.

The use of the vaginal douche in childbed as a routine practice is now happily a thing of the past. Still, there is a widespread belief that intra-uterine irrigation is the true treatment for puerperal fever. But the case is not so simple. It is necessary to differentiate. We have just insisted on the fact that puerperal women are not exempt from febrile disorders other than those due to sepsis. Before the douche is used the breasts should be examined. The douche can help but little in acute and suppurative inflammations awakened by labor and in patients who have had chronic unilateral salpingitis antedating pregnancy. In cases of true puerperal infection, due to the penetrative form of micrococci and associated with spreading forms of inflammation, the use of the douche is probably idle and no more effective than washing the surface of the skin in an external erysipelatous process; and yet it is common to persist in the practice in spite of negative results.

The douche repeated at short intervals is not unattended with drawbacks. Thus, it interferes with the localizing processes by which most of the pelvic inflammations become self-limited; it helps to extend the morbid condition of the uterine cavity to the tubes, and if continued long enough paralyzes the uterine walls, so that after death the fundus is found to contain a dirty pool alive with bacteria.

The employment of the douche in fevers resulting from the absorption of toxine due to the putrefaction of clots, membranes, and bits of placenta within the uterus, on the other hand, is followed by immediate favorable results and by the prompt disappearance of danger. But it is to be remembered that this is a clumsy attempt to remedy the results of past remissness.

The indications for the douche as popularly employed are especially vague. One man is governed by the odor of the lochia, but the odor in ordinary catarrhal endometritis is offensive, and yet all such cases recover unless aggravated by the douche. Again, as Bumm has pointed out, the products of

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tissue disintegration may be virulently poisonous and yet the odor may be absent. Others, again, use the douche when the temperature reaches 102°. But the temperature-guide leaves out of sight the multitude of temporary temperature elevations due to trivial local troubles, to psychical causes, and to malaria.

My own belief is that the intra-uterine douche in childbed is not indicated except when there has been slovenly help rendered by the attendant at the time of childbirth. Usually a single douche is sufficient and should always be preceded by thorough vaginal disinfection. I still prefer the bichloride solution (1 : 3000), but inject slowly and not more than a quart. Then I take great pains to secure good contractions, in order to expel all of the injected fluid. I would strongly recommend, after the douche, the introduction of the iodoform "bacillus" (two and one-half drachms of iodoform). If the fever persists it is sometimes desirable to follow the advice of Doléris, and explore the uterine cavity with the curette for retained bits of tissue. But it is time to stop treatment at this point. There is nothing more fatuous than the expectation of curing the patient by redoubling the vigor of the treatment.

THREE CASES OF TUMOR OF THE FRONTAL LOBE.[1]

BY W. GILMAN THOMPSON, M.D.,
VISITING PHYSICIAN TO THE PRESBYTERIAN AND NEW YORK HOSPITALS.

ALL cases of brain tumor are of special interest at present, since we are to-day in a position to consider not only their nature, progress, and probable site, but even the possibility of their removal by surgical interference. The cerebral hemispheres have been mapped out in the lower animals and in man, in regard to localized function, with a degree of accuracy which, although far from absolute with many functions, is full of encouragement for further study, and which within a few years has caused a complete reconstruction of our theories of the operation of many mental processes. In our maps of the cerebral hemispheres there is still a large undetermined region, the pre-frontal, regarding the functions of which there is great obscurity. In animals irritation of the posterior part of the frontal lobe has been shown to produce movements of the muscles of the head and neck, and sometimes rotation of the eyes, but the experiments are less satisfactory here than when performed in other parts of the brain. Removal of the anterior part of the frontal lobes in dogs seems to occasion loss of memory and changes in temper, the animals become restless and irritable, or, more often, dull and sleepy, but no abnormalities of motion or sensation are produced. In man very severe injuries of the frontal lobe have been reported, with considerable destruction of tissue, sometimes without any mental, motor, or sensory symptoms whatever. The historic "crow-bar patient"[1] was such a case, where extensive lesion of the frontal lobe produced no permanent impairment of mental faculties beyond slight irritability of temper. Another case, reported by Dr. Noyes,[2] was that of a man in whose orbit the breech-pin of a gun was found imbedded, a sharp end of the metal, one and a half inches long, and half an inch broad, having penetrated the cranium and entered the right frontal lobe, where it lay for five months without producing any symptoms referable to the brain. On the other hand, congenital or acquired defects of the pre-frontal region have often been observed in connection with enfeebled intelligence or idiocy. Many of the lower races of man present a relative deficiency in the development of this region, as well as of the temporo-sphenoidal lobe. Conversely, it is customary to associate a high degree of frontal development with great intelligence. Of the three cases of new-growths isolated in the anterior and middle portions of the frontal lobe, which I now report, one was a sarcoma, secondary to a sarcoma of the neck, and the two others were gummata, but with no accompanying syphilitic symptoms or history. All three patients exhibited more or less mental disturbance, either irritability of temper or dulness, or both in alternation. The two cases of gummy tumor were singularly alike in the irritation and convulsions which were present. The other patient had no such symptoms. Periodical general headache was complained of by two of the patients, not by the third. Only the important facts in the histories and autopsies of these cases are herewith presented, irrelevant details being omitted.

The patients all entered my service at the Presbyterian Hospital during the past two years, but one of them I had treated occasionally at my office during the three previous years:

CASE I.—V. B., German, male, aged forty-six years, married, cabinet-maker. The patient had led a sober and industrious life, and gave no history of syphilis or alcoholism. He had always enjoyed good general health. About six years before admission he was struck on the head by a falling timber. He was not immediately unconscious, but became delirious afterward. The site of the injury could not be definitely located. He recovered from the shock in about a week, but since that time he had had occasional epileptiform convulsions, these attacks usually following business worriment. At first they occurred about twice or three times a year. Of late they became slightly more frequent, never, however, recurring at shorter intervals than two

[1] A paper read before the New York Clinical Society, April 25, 1890.

[1] Barlow, Bigelow: American Journal of the Medical Sciences, 1850, vol. lvi. p. 13.

[2] Ibid., vol. lxxxiv. p. 45, 1882.

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months. Recently the attacks have grown much more severe. At first they were general, the individual convulsions continuing a few seconds with intervals of half an hour to an hour, the whole seizure lasting eight or ten hours. They were always associated with extreme constipation and with a well-marked aura. Recently, the convulsions, which were at first general and moderate, became much more intense upon the left side, and were followed by deepening coma. I had the patient under observation for three years before his admission to the hospital, and I saw him in several of these attacks. About a year before admission he had one which was followed by complete left hemiplegia, with absence of reflexes on the affected side, and slight muscular rigidity; sensation and speech remaining normal. The hemiplegia lasted for three days, with gradual but complete recovery. Between the seizures the patient worked hard, but his family and friends complained that he was abnormally irritable, excitable, and morose. His memory was very slightly impaired. The urine was always normal. Heart and lungs normal. No evidence of atheroma, or of any disease of abdominal viscera. During the attacks the temperature sometimes rose to 100°, but never above. The patient at these periods always complained of severe general headache. Three days previous to admission to the hospital the patient was seized with convulsions more severe than usual, accompanied by cyanosis and involuntary evacuations. For twenty-four hours the seizures recurred about once an hour, and in the interims he was conscious. After this they recurred every ten or fifteen minutes, and he passed into deep coma. The left hemiplegia recurred after the first twenty-four hours of this final attack, and after twelve hours more it was followed by complete hemianæsthesia of the left side of body and face. The reflexes, particularly the plantar, were increased, especially upon the left side. There was also decided convulsive twitching of the left side of the face. Pupils normal. On admission to the hospital the temperature was 102°. The convulsions did not return. The patient regained consciousness, but did not speak. The following day the heart-action suddenly became very feeble, and in a few hours the respirations were rapid and stertorous, œdema of the lungs ensued, the temperature rose to 105°, and two days after admission the patient died.

The autopsy revealed about a dozen gummy tumors, some larger, some smaller than a pea, which occupied the anterior and central parts of the right frontal lobe. Some of the tumors were quite superficial, others were deeply seated. Immediately around these growths the convolutions were pale and necrotic, with obliterating endarteritis and degeneration of the nerve cells. Nothing else of importance was detected.

I confess that I failed to diagnose this case. The possibility of traumatic epilepsy due to the pressure of a depressed fracture received from the injury six years before, occurred to me, but it could not be located, as the convulsions were at first general and there was no external evidence of violence. As the autopsy showed, no such condition had existed. Repeated hæmorrhages or irritation from emboli, for various reasons appeared equally out of consideration. It was late in life for idiopathic epilepsy to develop. The possibility of syphilitic tumor occurred to me, but I could get no history of venereal disease. The man had long been married, had a large family of perfectly healthy children and he appeared to be in remarkably sound physical condition. He was put upon various forms of treatment during the three years in which I had charge of the case, and was more relieved by large doses of the bromides than by anything else. He was also given potassium iodide, but he felt so well in the intervals between his attacks, that it was difficult to enforce any plan of treatment, and he only reported to me when alarmed by some unusually vigorous seizure. If I had been certain of the existence of a gummy or other tumor, I should have located it much further back, in the motor area.

CASE II.—C. T., negress, aged thirty years; married; housewife. The patient was well up to six years before admission. She denies alcoholic or syphilitic history, and a most careful examination fails to reveal any of the ordinary lesions or symptoms of the latter, excepting very slight enlargement of the cervical glands. Her several children died young. About six years ago the patient had for the first time an epileptiform convulsion which came suddenly, without apparent exciting cause. Similar attacks have since recurred at irregular intervals, gradually becoming more and more frequent, at first twice a week, and of late more often. The day before admission she had eight attacks. The seizures afterward recurred every fifteen or twenty minutes. At first the convulsions were general and involved all the limbs and body equally. Recently the right leg and arm have been more affected, and these have shown a certain amount of paralysis between the convulsions. Otherwise the patient's physical condition between the seizures was normal and she was going about until the time of admission, but she was rather dull and foolish mentally for a long time previously. On admission the attacks commenced on the right side of the body, and the head turned toward the right. Respiration was suspended during the seizures from spasm of the diaphragm. The convulsions, though very violent, did not last over half a minute, and there was little cyanosis. Urine and fæces were retained. The patient's mind was dull between the attacks, but she responded to questions. No headache complained of. A diagnosis of probably gummy tumor was made, and the patient was given potassium iodide 75 grains *per diem*, and all the usual remedies for the control of the convulsions were tried without effect, such as potassium bromide in 60-grain doses, chloral, amyl nitrite, etc. The urine contained a trace of albumin, but was otherwise normal. No aphasia or rigidity, and the reflexes were normal. During the seizures there was a low cry on inspiration, the facial muscles were involved, and the eyes were rolled upward and to the

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right; this was soon followed by tonic spasm of the muscles of all the limbs, and then by general clonic spasm with moderate opisthotonos. Thumbs strongly inverted. Pupils equal and normal. Temperature 100¾° to 101¾°.

The woman lived for thirty-six hours after admission. During the last night of her life she had nineteen convulsions despite every effort to relieve them. It was not justifiable to disturb her much, but in an interval between the seizures it was found that the patellar and plantar reflexes were diminished upon the right side. Pulmonary œdema developed and the patient died from heart-failure without spasm of the diaphragm. The convulsions continued until a few moments before death.

Autopsy.—General nutrition good. All the organs were normal, excepting the kidneys and brain. The kidneys showed the early stages of chronic diffuse nephritis. Brain normal, excepting left frontal lobe. Over the superior and middle frontal convolutions the pia was adherent and thickened, and contained about a dozen nodular gummy tumors, varying in size from a pea to a hazelnut, and with caseous centres. The convolutions beneath were somewhat softened, and contained a few similar nodules. The dura over the same region was thickened and adherent. The optic thalami and lenticular nuclei upon both sides seemed slightly more mottled than usual. The dura and pia were also thickened and adherent at the tip of the right frontal lobe, though there were no other lesions on this side.

I was able to make the diagnosis in this case merely from its extraordinary resemblance in nearly every important detail to the preceding one, which died a few months before. But the patient was seen too late for any relief from the large doses of potassium iodide which were administered.

Distinctive features common to Cases I. and II.

1. General irradiation of irritation from a local lesion.
2. Local lesion far in front of the common motor areas.
3. Entire absence of history or definite symptoms of syphilis.
4. Complete recovery between the attacks.

CASE III.—The patient, a female, aged forty-seven years, had been operated upon in the Presbyterian Hospital one year previously for sarcoma of the right side of the neck. She made a good recovery, and was well until six weeks prior to her re-admission to the hospital on August 15, 1889. During this interval of six weeks she had suffered from severe headaches (not localized), followed by periods of stupor lasting a day or two at a time, the attacks becoming constantly more frequent and more severe. No lesions were discovered in the thoracic or abdominal viscera. The patient could walk, but appeared weak and disinclined to stand. She seemed very listless and dull, and sensation in both legs was diminished and retarded. She had impaired articulation, which seemed likewise to be due to her mental dulness. At times she could think of certain words and pronounce them without difficulty; at other times she had apparently both amnesic and ataxic aphasia. She was of a race (Swedish) in which I have often noticed great apathy in any illness; she spoke English imperfectly, and therefore it was difficult to test her speech and sensation thoroughly. There were no unilateral nerve symptoms, and the pupils were normal in size and reaction. The patellar and plantar reflexes seemed equally diminished on both sides. The movements of the arms and hands were normal. No disturbance of the sphincters. The most pronounced symptom was the mental dulness. This condition lasted for sixteen days, with periods of lucidity in which the patient seemed fairly intelligent and answered questions without aphasia. The dulness then increased until complete coma resulted, with stertorous respiration, cyanosis, incontinence of urine, and total loss of sensation. A loud, harsh mitral systolic bruit developed, the pulse became rapid and feeble, the temperature rose from normal to 104°, and, on the nineteenth day after admission, she died from heart-failure. There was no emaciation, and no marked cachexia.

Autopsy.—There was nothing of importance in any of the organs excepting the brain. The calvarium was normal. Both the dura and pia were congested. There was atrophy of the convolutions over the vertex of both hemispheres. In the anterior portion of the right frontal lobe was a mass 4 by 3.5 centimetres in its diameters, black in color, and quite firm. There was an excess of fluid in the left lateral ventricle. Weight of brain, 50 ounces. Vessels at the base were normal.

Microscopical examination.—Sections of the tumor of the right hemisphere show its structure to consist mainly of a fibrous connective-tissue stroma with small and large round cells in close association with the stroma. In places there are numerous alveoli. In some of these are found the above-described cells. The growth is a fibro-sarcoma. Tissue resembling non-striated muscle is seen in some portions of the tumor. The tumor also contains much pigment and numerous bloodvessels. No giant cells are observed. There are areas of a granular appearance which stain imperfectly.

The interesting features of this case are: first, the absence of unilateral or distinctly localized symptoms, with the presence of a cerebral tumor as large as a small egg; secondly, the varying mental condition of the patient. The diagnosis of a cerebral tumor was suggested by the mental condition and the patient's history of previous operation for malignant growth. If the situation of the tumor could have been exactly determined, it might have been removed by operation, as it was near enough to the surface. The tumors in the other cases could not have been excised, for they were too numerous, and some of them were too far from the surface. All three cases are interesting in regard to the periodicity which was noticed in the appearance of the symptoms.

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The cases seem to add but little to our knowledge of the functions of the frontal lobe, but they confirm previous observations in regard to alterations in temper and disposition, mental irritability associated with alternating stupor, which accompany lesions of this obscure region. The convulsions may have been due to indirect pressure upon the motor areas posterior to the tumors, which was periodically augmented, perhaps by temporary alterations in the local blood-supply, perhaps by the commencement of a new focus of growth, to which the cortical cells would later become accustomed.

49 EAST THIRTIETH STREET.

A CASE OF URÆMIA WITH CHEYNE-STOKES RESPIRATION LASTING SIX DAYS, TERMINATING IN RECOVERY.[1]

BY NORTON DOWNS, M.D.,
RESIDENT PHYSICIAN, PENNSYLVANIA HOSPITAL.

IT is through the courtesy of my chief, Dr. J. M. Da Costa, that I am able to report the following case:

M. F., an Italian laborer, aged forty years, was admitted to the medical ward of the Pennsylvania Hospital on the morning of January 22, 1890. Unfortunately, we were unable to obtain any family or personal history, as the man could not speak English. He had walked several blocks at least to reach the hospital. After being admitted he presented the following symptoms: Temperature in axilla 98°. Pulse could scarcely be felt at the wrist, and was something over 120. Respiration was typically Cheyne-Stokes in character. Face intensely cyanosed. Entirely conscious. Tongue protruded without difficulty, but slightly to the right side; it was coated and tremulous. Eyelids œdematous. Pupils slightly contracted, and reacted but feebly to light. Heart's action was regular, but feeble, and sounds could just be heard. No murmur detected. No increase in cardiac dulness. Lungs everywhere filled with coarse mucous râles; no impairment of percussion resonance. Area of splenic dulness slightly increased. Legs and thighs were œdematous. The patient was immediately catheterized, and four ounces of muddy urine obtained; it had a specific gravity of 1030; alkaline in reaction. Fully three-fourths of albumin by bulk, and a large number of epithelial, granular, and hyaline casts, with free blood, mucus, and triple phosphates.

He was given a half ounce of hot whiskey, followed ten minutes later by extract of jaborandi, 30 minims, and compound jalap powder, 30 grains. One hour later the patient was in a profuse sweat, which had the characteristic urinous odor; the bowels were also freely moved. The jaborandi and jalap in the same doses were repeated during the afternoon, and acted well on the skin and bowels. By evening the temperature had risen to 100°. The Cheyne-Stokes respiration continued. No convulsion or stupor.

January 23. Cheyne-Stokes respiration remains unchanged. The patient passed a comfortable night, sleeping most of the time, apparently without being inconvenienced by the abnormal respiration. Is entirely conscious, and takes nourishment well. Was to-day placed on infusion of digitalis, 1 drachm, and acetate of potassium, 10 grains, every second hour; and fluid extract of jaborandi, 30 minims, three times a day, the bowels to be kept open with jalap. Passed naturally six ounces of urine during the night. Has sweat profusely all day. Toward evening he was placed in hot-air bath, after which he seemed decidedly brighter.

24th. The Cheyne-Stokes respiration continues without change, during sleep as well as when awake. Passed eighteen ounces of urine in past twenty-four hours, with a specific gravity of 1024; alkaline reaction; albumin three-fourths by bulk. A large number of granular and epithelial casts found. Perspiring freely.

25th. Passed fifty ounces of urine in past twenty-four hours, with a specific gravity of 1024; still loaded with albumin and casts. Pulse is decidedly stronger than when admitted. Heart sounds are more distinct, and the râles have entirely disappeared from the lungs.

26th. The Cheyne-Stokes respiration continues. Urine in past twenty-four hours eighty-two ounces; pale straw-colored, specific gravity 1016. Albumin one-half bulk. The casts have greatly diminished in number. The patient has been sweating, and bowels have been moving freely each day, while the œdema is fast disappearing from the legs.

28th. Cheyne-Stokes respiration was absent this morning for the first time since admission. The temperature for the past four days has been decidedly subnormal, reaching 95° during the night. Cheyne-Stokes respiration was present again in the evening.

30th. Patient sitting up in bed. Respirations natural. Tongue still protrudes to the right side. Urine in past twenty-four hours, fifty-three ounces; specific gravity 1016; alkaline; albumin, one-fourth bulk; no casts found in a number of specimens examined.

February 2. Infusion of digitalis stopped. Urine, thirty-two ounces; specific gravity 1018; trace of albumin; no casts.

8th. Steadily improving. Œdema has disappeared. Appetite good. Mental condition excellent.

24th. Urine to-day, one month after admission, is entirely free from albumin and casts.

March 3. Discharged recovered.

Among the many interesting features connected with this case the one to which I wish to call attention is the Cheyne-Stokes respiration followed by recovery. It will be seen from the notes that the patient walked into the hospital with this curious phenomenon present to a marked degree. How

[1] Read before the Philadelphia County Medical Society, April 23, 1890.

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long it had existed before admission is impossible to say, but it did occur for six days continuously while in the hospital, during which time the patient was entirely conscious, taking his nourishment without assistance, and seeming not in the least inconvenienced by the altered condition of the respiratory action.

This phenomenon consists of two distinct stages: one of apnœa, the other of dyspnœa. At the end of the apnœal period the respiratory action begins, at first so shallow as to be hardly recognizable, but gradually increasing in force, volume, and frequency, until the period of dyspnœa is at its height and then gradually becoming slower, more shallow, and less distinct until it entirely disappears, and the stage of apnœa is again reached, thus completing the cycle. The length of time occupied by the two stages is variable; for instance, the stage of apnœa may occupy from a few to forty seconds, the stage of dyspnœa from one-half to two minutes.

In this case during the period of apnœa, which by many counts was found to last from thirty to forty seconds, the face became intensely cyanosed, the heart's action slightly slower, the eyes becoming more prominent, but complete consciousness was preserved. When in the period following, or that of dyspnœa, the face became flushed, the heart's action slightly accelerated, while a general sense of discomfort prevailed. This stage lasted, on an average, seventy to eighty seconds. In neither stage was alteration in the state of the pupil noticed, though carefully looked for.

This form of respiration was first studied by Dr. Cheyne, of Dublin,[1] in 1818, who noticed a peculiar form of ascending and descending respiration in a fatal case of fatty degeneration of the heart. From this time there do not appear to have been any observations on the subject recorded until about 1846, when it was made prominent by Dr. Stokes,[2] also of Dublin, who recorded cases of fatty degeneration of the heart, in which this symptom occurred. Since then it has received but little attention. Among the observers who have attempted to explain it may be mentioned Traub, Filehne, Little, and Bramwell.

The phenomenon may be considered rather rare, but from the variety of diseases in which it may occur it is curious that it is not seen more frequently. From the fact that the first observations made on the subject were in connection with fatty degeneration of the heart, it was considered pathognomonic of this lesion, but it was soon noticed in other cardiac affections, and in uræmic coma, and the idea of its being pathognomonic of any disease was dispelled. There can, however, be no doubt of the fact that it is an extremely frequent symptom of the diseases in which it was first studied; for of the ninety-five cases of fatty degeneration of the heart reported to the London and Dublin pathological societies,[1] twenty-nine cases presented this phenomenon. It has also been seen in simple dilatation of the aorta, and in atheroma of the aorta and of the aortic valves. Dr. James Little[2] reports three cases in which ascending and descending respiration occurred, one being fatty degeneration of the heart, another atheroma of aorta and aortic valves, and the third atheroma of the aorta. According to Gowers,[3] it has been observed in uræmic coma and in rare cases—chiefly in children—in typhoid fever, scarlet fever, diphtheria, influenza, pneumonia, whooping-cough, and opium-poisoning. Fothergill[4] states that the most typical example he has seen was in a case of apoplexy. Dr. Andrew[5] reports a case of typhoid fever with extensive consolidation of the right lung in which this phenomenon occurred. Frantzell[6] narrates an instance where it occurred after the administration of morphine; O'Neill,[7] its occurrence after chloral, and Biot, after potassium bromide. It has also been observed in brain syphilis, brain tumor, and emphysema of the lungs; and I know of an instance where it occurred during the course of acute croupous pneumonia which was followed by recovery. Gowers[8] and Pepper[9] have observed it in tubercular meningitis. W. G. Thomson[10] states that he has seen it in insolation and metallic poisoning. Dr. James Cummings[11] has observed it in dogs after the injection of chloral. Frederick Treves[12] saw the phenomenon in a case of traumatic anæmia. It is said to be a normal condition in the hibernating hedgehog and dormouse.

The state of the pupil during the phenomenon has been closely watched by many observers, and several of them report cases where contraction and dilatation occurred synchronously with the stages of apnœa and dyspnœa; for instance, Dr. Alexander Robinson[13] reports two cases of apoplexy in which Cheyne-Stokes respiration was present, and says that, "during the period of dyspnœa the pupils became widely dilated and at the same time the extremities became rigid, while during the stage of apnœa the pupils contracted firmly and the muscular

[1] Dublin Hospital Reports, vol. ii., 1818.
[2] Diseases of the Heart and Aorta, p. 324.

[1] Hayden: Diseases of the Heart and Aorta.
[2] Dublin Quarterly Journal of Medical Sciences, vol. xlvi. p. 46.
[3] Diseases of the Nervous System.
[4] The Heart and its Diseases.
[5] Lancet, 1877, vol. i. p. 385.
[6] Berliner klinische Wochenschrift, vol. vi.
[7] Lancet, 1880, vol. ii. p. 691.
[8] Loc. cit.
[9] Philadelphia Medical Times, 1876, vol. vi. p. 416.
[10] Reference Hand-book of Medical Science.
[11] Dublin Journal of Medical Sciences, vol. lviii.
[12] Lancet, 1877, p. 481.
[13] Lancet, 1886, vol. ii. p. 1016.

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rigidity passed away." Dr. R. Kirk[1] has also noted the rhythmical contraction and dilatation of the pupil, and quotes from Ziemssen, Bernheim, and Biot on the same observation. In Dr. Kirk's case the pupils were not influenced by light. Biot gives as an explanation of this condition of the pupil the changes which are said to occur in arterial tension during the stages of apnœa and dyspnœa, the pupil contracting as the pressure falls and dilating as it rises. That there is a change in the arterial tension has been demonstrated in several instances, but it is by no means constant, and did not occur in the above case, except in a very slight degree.

In attempting to explain the cause of Cheyne-Stokes respiration one is at once struck with the number of theories which have been advanced, only to be exploded by other observers; nor is this to be wondered at when one considers the variety of diseases in which it may occur and their entire dissimilarity. I do not intend to offer any new explanation, but simply to discuss a few of the more prominent.

When the symptom was first studied in connection with fatty degeneration of the heart and later in hypertrophy and atheroma, Dr. James Little[2] considered it to be due to the inability of the heart to propel all the blood it received through the systemic circulation, causing thereby a damming up of the arterial blood in the lungs, which blood, being charged with oxygen, would not give the required stimulus to the peripheral filaments of the pneumogastrics when the period of apnœa occurred. During the latter stage the heart would be able to overcome the stasis by reason of its action becoming more regular, slower and stronger, which in turn would force the venous blood from the body, surcharged with carbonic acid, producing the stage of dyspnœa.

This very elaborate theory would, of course, not hold after it was noticed that the phenomenon might occur in cases when the heart and aorta were entirely normal. The subject was carefully studied in Germany, which led to the advancement of a theory by Traub,[3] the substance of which was that there was a diminished excitability of the respiratory centre, requiring, therefore, more carbonic acid in the blood to excite it to action. Filehne[4] attacked this theory and stated that this alone was insufficient to produce the phenomenon, at the same time advancing the theory, that there was a greater excitability of the vaso-motor centre in these conditions than of the respiratory centre—just the reverse of normal—and from this cause there was produced an alternate arterial spasm and relaxation by the accumulation and discharge of the carbonic acid in the blood. This again has been denied by Dr. G. A. Gibson,[1] on the ground that inhalations of nitrite of amyl do not lessen the periodic pauses, as it should, were the respiratory centre the chief factor. Dr. Gibson took some very interesting tracings of the respiratory movement in this condition, from which he shows that hypodermic injections of pilocarpine decidedly lessened the stage of apnœa for a period of fifteen minutes after each injection.

Landois and Sterling[2] state that the phenomenon may occur whenever the blood itself or the normal supply of blood to the brain is altered. Gowers[3] leans decidedly to Filehne's theory when he says that "unless the simple rhythmical tendency of the depressed (respiratory) centre is adequate to produce the phenomena, they can best be explained by the assumption that the rhythmical tendency is modified by some other periodical influence of which vaso-motor spasm is the only one which, according to our present knowledge, can be concerned as acting and adequate." Pepper[4] believes it is due to an impaired excitability of the respiratory centre.

Bramwell,[5] who goes into the whole subject of the Cheyne-Stokes phenomenon very thoroughly, cannot see that any of the theories yet advanced exactly accounts for the symptoms, and adds that further elucidation of the subject is necessary before a correct conclusion is attained.

In the *Lancet*, 1877, p. 245, and again on March 29, 1890, there appeared interesting editorials on the subject, in which the various theories are criticised, but in neither is any conclusion reached.

The pathological lesions found in cases where this symptom is present are naturally plentiful, but as yet none of them appear to throw any direct light upon the subject.

Gowers[6] mentions the fact that it may occur in meningitis from implication of the medulla, while in Pepper's two cases tubercular meningitis was the cause.

Tizzoni[7] saw two cases where the symptoms existed, and at the post-mortem there was found an ascending inflammatory change in the vagi in one case, while in the other the same change was found in the superior half of the medulla.

Fatty degeneration of the heart is found in a larger number of instances, while atheroma of the aorta or aortic valves, contracted granular kidneys, tumors of the brain, etc., are found in others. Edes[8] mentions the fact that he has seen four cases of

[1] Lancet, 1886, vol. ii. p. 1153.
[2] Dublin Journal of the Medical Sciences, vol. xlviii. p. 46.
[3] Berliner klinische Wochenschrift, Nos. 13, 14, 1874.
[4] Ibid., Nos. 16–18.

[1] The Practitioner, vol. xxxviii. p. 85.
[2] Text-book on Human Physiology, 3d edition.
[3] Loc. cit., p. 558. [4] Loc. cit.
[5] Diseases of the Heart, p. 80. [5] Loc. cit.
[7] Lancet, p. 385, 1877.
[8] Boston Medical and Surgical Journal, p. 734, 1879.

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Cheyne-Stokes respiration occur in one family, viz., father, mother, and two sons, and the two cases reported by Knaggs[1] were brother and sister, which I think shows that there may be some neurotic predisposition to the phenomenon.

The length of time that the phenomenon may exist depends very much upon the disease in which it occurs. Gowers quotes a case from Murri where it extended over a period of forty days. During the continuance consciousness may or may not be preserved. Dr. Samuel West[2] saw it last over two months in a case of fatty degeneration of the heart. The phenomenon very frequently disappears during the course of a disease, to return at irregular intervals.

In many cases the patients exhibit evidences of mental suffering; in some during the stage of apnœa, but I think more frequently during the dyspnœic one, though nothing approaching this was seen in the case above recorded.

The occurrence of Cheyne-Stokes respiration during the course of a disease is sufficient to make the prognosis exceedingly grave; indeed, Dr. Stephen Mackenzie considered it of sufficient importance to ask the members of the London Clinical Society,[3] at a recent meeting, if they had ever seen a case occurring in other than injury to the head, get well? Dr. West, in reply, stated that one or two cases of recovery were on record—in one, probably false diagnosis of tubercular meningitis. Since the publication of the inquiry the *Lancet* has contained numerous communications in answer to Dr. Mackenzie's question. For instance, in the number for March 15th, Dr. O'Neill reports a case where the phenomenon occurred in a man eighty years old, probably due to cardiac disease. While G. B. Flux saw it occur during puerperal septicæmia, the patient recovering, Lawford Knaggs[4] reports a recovered case of Bright's disease in which the phenomenon existed for some time.

Dr. W. O. Stillman[5] reports seeing a case recover with this symptom present, the diagnosis being serous effusion affecting the base and anterior vertex of the brain.

Both Pepper and Gowers consider the phenomenon of fatal significance when occurring in tubercular meningitis, and the same can also be said of fatty degeneration of the heart.

Dr. William O'Neill[6] draws attention to a form of respiration closely allied to that described by Drs. Cheyne and Stokes, where there is a decided pause for a considerable length of time in the respiratory act, but not accompanied with the gradual ascent and descent. He relates a case where a woman suffering with hypertrophy and dilatation of the right side of the heart presented this symptom to a marked degree. He says that when the patient closed her eyes in sleep the respiratory act would cease, and only recommence on waking. He estimates the stage of apnœa to last from twenty to thirty seconds. The gradual ascending respiration was present, but at the height of the stage of dyspnœa they would stop abruptly. I have lately seen an example of this form of breathing in a fatal case of tubercular meningitis, where for a few hours before death the patient would suddenly cease breathing, the respiratory act beginning again with a long, full, deep respiration.

[1] Lancet, April 5, 1890.
[2] British Medical Journal, March 8, 1890.
[3] Lancet, March 8, 1890.
[4] Lancet, April 5, 1890.
[5] THE MEDICAL NEWS, 1888, vol. ii. p. 555.
[6] Lancet, October 30, 1880.

CLINICAL MEMORANDA.

MEDICAL.

A Case in which Cheyne-Stokes Breathing Persisted for Three Weeks.—J. C. L., the subject of these notes, was admitted, at the age of thirty-four years, to the Pennsylvania Hospital for the Insane, January 25, 1849, from South Carolina, of which State he was a native.

When he first came under my care in December, 1884, he was in a condition of dementia, and was subject to paroxysmal excitement, during which he became noisy and at times violent.

My notes at that time record that the heart sounds were feeble and that there appeared to be a slight blowing murmur, but owing to the patient's irritable state and a habit which he had of constant low muttering, I was not able then, or at any subsequent time, to make a satisfactory examination.

Repeated examinations of his urine gave only negative results.

In March, 1886, the notes show that he had some œdema of the feet and ankles, which was relieved by confinement in bed for a few days. The heart sounds were feeble at this time.

In January of the following year the œdema was again observed. At this time another careful examination of the urine failed to reveal any kidney lesion. This œdematous condition was noted at various periods down to the time of his last illness. It was always relieved by inducing him to remain in bed for a few days. During the last two years of his life there was observed some tendency to varicosity in the veins of his lower extremities.

On July 10, 1889, the patient appeared to be suffering from some physical discomfort, but no coherent or relevant replies could be elicited from him. He had some diarrhœa, and directions were given as to his diet, and a prescription made. On the following morning my attention was attracted to him by his look of distress. He was sitting up in the ward, breathing in a labored manner, his face cyanotic, and on examination I found his hands cold and bathed in perspiration, pulse rapid and irregular. He was immediately undressed and placed in bed.

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It was at once observed on making an examination, that there were scattered over the chest and abdomen numerous petechial spots. Some of these were vesicular in character and varied from the size of a large pin-head to that of a small split pea. The majority, however, had the appearance of minute sub-dermal hæmorrhages. Further examination showed that similar spots were present on the neck and extremities; they were, however, more abundant on the trunk. The most marked peculiarity observed in the patient was the character of his respiration, which was distinctly Cheyne-Stokes. The whole respiratory movement, including the period of rest, occupied seventy-five seconds—that is, the respirations occupied one minute from the commencement of faint respiration, with gradual increase and then decrease in volume, rapidity and force; and were succeeded by fifteen seconds of rest or entire cessation of respiration. The number of respirations was thirty per minute. During these periods of apnœa the pupils contracted and did not respond to light, the pulse became slower and more irregular, the face assumed a cyanotic hue, and consciousness seemed abolished. The patient's temperature was but slightly above normal. His pulse was 144, feeble and very irregular, and such was his restlessness and the irregular action of the heart that it was impossible to obtain any satisfactory information as to the heart-sounds.

Stimulants were administered and the patient placed under close observation.

No material change was noted in his condition from day to day for a few days. The pulse continued irregular, and varied from 140 to 160. The respirations continued to show the peculiar Cheyne-Stokes character. On the 18th of July the number of respirations in each period was forty-eight, occupying eighty seconds of time and followed by a period of rest of twenty seconds. During sleep the period of apnœa was observed to be more prolonged; for example, at 1 A. M., July 20th, the respirations were thirty-four in number and occupied sixty seconds, while the period of apnœa was thirty-nine seconds in duration. The pulse was slower, being but 102. At 9.30 A. M., of the same day, while awake, the respirations during several periods were forty in number, occupying seventy-five seconds, followed by a period of cessation of twenty-three seconds duration.

During the night of the 21st the respirations were much more irregular in character than at any time since the commencement of the Cheyne-Stokes phenomenon. At one time, 10 P.M., forty respirations occupied seventy-five seconds with a period of rest of twenty seconds following, and in a short time it was observed that the period of apnœa had wholly disappeared. The respirations continued their peculiar Cheyne-Stokes character, rising from faint, scarcely perceptible respiration to a period of marked dyspnœa, and then falling away to very faint movements. After a few of these periods, the interval of complete cessation again appeared. It was also noticed that during the period of most marked dyspnœa the respirations were distinctly blowing.

At 1.30 P.M., on the 23d, the patient's condition appeared markedly worse. He suffered much more from dyspnœa, and his face was more cyanosed. His extremities were cold and cyanotic. Respirations, forty in eighty seconds, followed by a period of apnœa of twenty seconds. When this observation was made the patient was lying on his right side. After turning upon his back the cyanosis completely disappeared in a few seconds, and his respirations became easier, but did not lose their peculiar character. Subsequent to this it was observed on three or four occasions that a condition of marked cyanosis would disappear when the patient turned from his side to his back. This was true of either right or left side. Occasionally, from the first, just at the close of the period of apnœa, slight convulsive movements were observed in the hands and arms.

On two or three occasions, from this date until his death, the period of apnœa was absent for intervals of from six to fifteen minutes, but the respiratory movements retained the other Cheyne-Stokes phenomena. The petechiæ in some places coalesced and had the appearance of ecchymoses of considerable area. The lungs became emphysematous and the patient showed evidences of exhaustion. Repeated urinary examinations gave only negative results. During the night of August 1st the respirations were more labored and the interval of apnœa more and more prolonged, and at 7 A.M. of the 2d of August the patient died quietly.

Autopsy, eight hours after death.

Body of a fairly nourished man. Ecchymoses and petechiæ over thorax and abdomen. Lungs emphysematous: liver, nutmeg and fatty; spleen hardened; kidneys, macroscopically, apparently in second stage of parenchymatous nephritis. Pericardium contained four ounces of fluid. Heart hypertrophied, with dilatation of left ventricle. Aortic and mitral valves admit three fingers each. Atheroma of one aortic cusp and of right coronary artery. Chronic lepto-meningitis; membranes adherent over vertex; convolutions atrophied; brain œdematous. Ecchymoses in dura to the outer part and above the lateral sinuses, and in the tentorium.

Microscopic examination not yet made.

EDWARD N. BRUSH, M.D.,
Senior Assistant-Physician to the Pennsylvania Hospital for the Insane.
PHILADELPHIA.

SURGICAL.

Fibroid Polypi of Bladder. Tubercular Peritonitis.—The following somewhat unusual cases which occurred in my practice may be of interest:

CASE I.—A woman, twenty-six years old, stout and robust. About two months ago she aborted and suffered from after-pains due to the retention of clots. When convalescent, symptoms of bladder trouble began. She complained of dragging and burning pain during micturition, which was very frequent, and often accompanied with great vesical tenesmus and slight hæmaturia.

Believing her to be suffering from cystitis, I put her on alkaline treatment, and ordered absolute rest. On the third day of this treatment the pain, tenesmus, and hæmaturia became threatening, and were followed by retention of urine, demanding frequent catheterization and the administration of anodynes, which, however, gave but little relief. The bloody urine was very fœtid and contained some pus. The bladder was washed out with warm solution of borax and carbolic acid twice daily by means of a fountain syringe—filling the bladder with the solution and drawing it off with a soft catheter, which I

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found more efficient than the double-current catheter. I continued this treatment for three days, during which time the patient had but little fever, her temperature ranging from 99½° F. to 100° F.

On the sixth day I noticed a hernia or protrusion from the meatus urinarius of a mass somewhat resembling congested and inflamed mucous membrane of the bladder or urethra. This I was very careful to reduce before attempting to use the catheter. The mass obstructed the meatus and distended the urethra, causing great pain and soreness.

Palpation of the bladder, through the vagina, showed its walls to be very thick, tender, and indurated from the inflammation; it also protruded as a well-marked vaginal cystocele.

On the morning of the sixth day I found the patient suffering agonies and almost in collapse. When I examined the meatus the same mass was seen protruding and of a gangrenous appearance. I seized it and made traction upward, downward, and laterally, when it came away, followed by a gush of bloody urine, and great relief to the patient. The tumor was a fibroid polypus about three inches long and one and a half inches in diameter; the pedicle was small, and apparently had sloughed away from the bladder.

The pain this woman suffered was greater than that of labor. After she had somewhat recovered from the shock I washed out the bladder with a warm solution of common salt. After this she was comfortable and suffered but little pain other than tenderness in the urethra on introducing a silver catheter. On the following day the catheter came in contact with a foreign body which seemed to be a pendulous tumor. I regard this as a rare and interesting case, and I hope to be able to remove other existing tumors *per urethram*, by dilatation instead of suprapubic or vaginal cystotomy.

CASE II.— A negro, aged twenty-six years, had been suffering for two years from some abdominal trouble, the symptoms of which were, pain, first in the region of the stomach, then in the liver, then in the umbilical and hypogastric region; vomiting at various times, especially one hour after meals, but the vomited matter never contained blood. Defecation was painful, micturition less so; appetite poor. He was constipated and very much emaciated. There was no cough or pain in the chest. The left leg was œdematous; abdomen at times swollen, and at other times retracted, and when in the latter condition, there was dulness over most of the abdomen; no fever.

The beginning of the attack was so insidious that the patient paid but little attention to it. He died from inanition.

Post-mortem.—All the abdominal viscera were agglutinated and hardened, and everywhere on the peritoneum there were innumerable white papules or milia, which were confluent on the visceral peritoneum, but discrete on the parietal portion; there were no signs of inflammation present. No tubercular deposits were found in the lungs or pleura. The case was evidently miliary tuberculosis of the peritoneum.

The interesting features of this case are the gradual onset, long duration, and that the lungs were not attacked.

W. R. JACKSON, M.D.,
Visiting Physician to City Hospital,
Mobile, Ala.

MEDICAL PROGRESS.

Naregamia as an Expectorant. — The tincture of naregamia is obtained from the stems of the Naregamia Alata, a shrub found in Goa. In some experiments instituted by PROFESSOR DRASCHE (*Therapeutische Monatshefte*) with a tincture furnished by Parke, Davis & Co., doses of 15 to 50 minims were exhibited, the agent showing itself to be a good expectorant, especially when there was an irritative cough due to scanty secretion, or when tough sputum made expectoration difficult. In the latter cases the sputum became more abundant and fluid. Naregamia rendered particularly good service in a case of bronchial catarrh with scanty, tough sputum and occasional attacks of asthma. In four cardiac cases with catarrh of the air-passages naregamia showed good effects. The drug was especially beneficial in emphysema, though in one case it invariably gave rise to vomiting. There were two patients suffering from dyspepsia who had to give up the use of the remedy on account of vomiting. Beside these, one patient (tuberculous) complained of disagreeable sensations, pressure and even headache, which ceased after the medicine was discontinued. Finally, the pure tincture, which has a repulsive taste, provoked in one patient an intolerable irritative cough, which was avoided by prescribing it with cherry-laurel water, thus:

℞.—Tincture of naregamia . . 1 drachm.
Cherry-laurel water . . 1 ounce.—M.

Ten drops every hour.—*Pittsburg Medical Review*, May, 1890.

Chloride of Zinc in the Treatment of Cervical Endometritis.—Many cases of mild uterine catarrh, either of the body of the uterus or of the cervix, have been treated by VERGELY with solutions of chloride of zinc. The treatment is commenced eight days after the termination of menstruation, and in the absence of any pain in tissues contiguous to the uterus or ovaries. The vagina and cervix uteri are first irrigated with a hot 15 per cent. solution of boric acid combined with 1 to 200 solution of sublimate. The uterine cavity is then carefully cleansed of all mucus, and a 5 per cent. solution of chloride of zinc applied over the entire surface of the mucous membrane. This operation is repeated two or three times at intervals of eight days, when a more concentrated solution of the zinc may be used. The application is rarely painful, except in cases in which there is much congestion or inflammation. In the latter case the zinc may excite bleeding, which may continue moderately for several hours. Should there be fungosities, or should the ulceration not yield promptly to the zinc treatment, one may employ a solution of chromic acid (1 to 3). The latter gives very little pain, and produces a yellow slough which falls off in about six days. It may be well to alternate the chromic acid with the zinc. Great care must be used that these solutions are applied only to the diseased tissues, and after their use the tissues should be again irrigated with the boric acid sublimate solution, this being followed by the introduction of a vaginal tampon of cotton, which should be retained twenty-four hours.—*Archives of Gynæcology*, May, 1890.

Thyroid Asthma.—DR. G. A. WRIGHT has observed five cases of what he calls "thyroid asthma," which is dys-

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pnœa caused by pressure upon the trachea by an enlarged thyroid gland.

In three cases the glandular enlargement was simple hypertrophy; in one case the patient was cretinoid; in one the glandular enlargement was coincident with all the symptoms of Graves's disease. In all cases the dyspnœa was due to direct pressure upon the sides of the trachea by the enlarged lateral lobes drawn tightly together by the isthmus, and the trachea was typically "scabbard-shaped."

Four cases were young adults; the fifth was a child of two or three years of age. In two of the cases tracheotomy only was performed; in two the isthmus only was divided, and in one case the trachea was opened and the isthmus divided twenty-four hours later. Four of the patients died, one (the child) from broncho-pneumonia; one from œdema of the lungs, the obstruction being only partially relieved; two from slipping of the tracheotomy tube in consequence of the depth of the trachea from the surface. The patient who recovered was the young man in whom division of the isthmus was performed in the interval between attacks of dyspnœa. Certain points seem to be fairly well established in regard to thyroid asthma, and some of them are illustrated by these cases: 1. The onset of the symptoms is often sudden, urgent, and spasmodic. 2. The symptoms are due to direct lateral pressure upon the trachea. 3. The mechanical pressure is only remediable by mechanical means. 4. Tracheotomy is attended with considerable difficulty and there are subsequent dangers of cellulitis, of slipping of the tubes, and of lung complications. It is, moreover, not curative. 5. Division of the thyroid isthmus is a comparatively simple operation, is followed in a large proportion of cases by shrinking of the gland, at once partially relieves dyspnœa, and avoids the evils which follow complete removal of the gland. It is not usually accompanied by much hæmorrhage. 6. Division of the thyroid isthmus combined with tracheotomy has been found to give a very high rate of mortality. 7. If tracheotomy is performed a specially long tube is required.

Mr. Wright thinks that to relieve symptoms and diminish mortality the proper course is to divide the isthmus at the first sign of increasing dyspnœa, and although the onset of thyroid asthma is often sudden, there is usually time to operate before the symptoms become very urgent, if there is no delay. If the case is allowed to continue long, there may not be time for the trachea to recover its shape sufficiently to allow respiration to go on. Specially long and large tubes should be employed for these cases, the depth of the trachea from the surface allowing only a very short length of any ordinary tracheotomy tube to lie in the trachea, and as swelling takes place after the operation, this short length is still further lessened. The occurrence of fatal pressure upon the trachea in Graves's disease must be exceedingly rare, and the author has not found a reference to such a case. Anæsthesia in these cases requires much care, and though in some it may diminish spasm and lessen dyspnœa, it is more likely to complete the asphyxia during the early stages of administration.—*Journal of Laryngology and Rhinology*, May, 1890.

Chloralamid Hypodermically.—SCHMIDT employs chloralamid hypodermically, the solution used being thirteen grains of chloralamid dissolved in five drachms of distilled water. Sixteen minims of this subcutaneously is usually a sufficient dose, and acts more rapidly than larger doses given by the mouth.

Morvan's Disease.—In 1883 Morvan described an "analgesic paresis with whitlows of the upper extremities," a case of which was recently lectured upon by CHARCOT (*Le Progrès Médicale*, March 15 and 22, 1890), who pointed out the following characteristics: The disease usually begins with pain in the fingers, followed by paresis and analgesia of one hand and forearm, then of the other; and, finally, whitlows form and are followed by necrosis of the phalanges. In some cases paresis and analgesia are absent, and the only symptom is the progressive formation of whitlows, which may or may not be painful, and necrosis. Other trophic affections of the hands, such as fissures, perforating ulcers of the palm, lividity of the skin, lowered temperature of the part, and increased secretion of sweat, have been observed. The duration of the disease is very long and the prognosis grave.—*Medical Chronicle*, May, 1890.

Hæmorrhage during Pregnancy.—DR. A. E. AUSTLAWRENCE recently read a paper before the Bath and Bristol Branch of the British Medical Association in which he dealt as follows with all the causes of hæmorrhage during pregnancy (*British Medical Journal*, May 10, 1890):

1. Persistence of menstruation. This the author considers possible but exceedingly unusual, and apparently thinks that most of the cases reported are errors in diagnosis.

2. Bleeding from an eroded and granular cervix. Here a little blood is lost at irregular intervals, increasing in amount at what would be the menstrual periods; or there may be a continuous discharge of brown mucus in variable amounts.

The treatment of these cases should consist in the application of nitric acid to the erosions, or of simple astringent injections. In some instances the erosion extends into the cervical canal or uterus, and if hæmorrhage is continuous and exhausting the patient, induction of labor is the only recourse. In the latter form of hæmorrhage an examination will reveal the blood exuding from the os.

3. Hæmorrhage from malignant disease of the cervix. In this form the diagnosis is, of course, readily made by a vaginal examination.

Induction of labor will always check bleeding from this cause to a great extent. If pregnancy is permitted to continue, the hæmorrhage will increase with the growth of the uterus.

4. Hæmorrhage may also be caused by simple or malignant ulceration of the vagina, by vascular growths of the meatus, and by ruptured vaginal veins.

The diagnosis of these conditions is easy, and treatment should be conducted on general principles.

5. Hæmorrhage due to some fault of the placenta. The position of the placenta may be normal but the organ deficient in the trabecular structure which supports the bloodvessels, or the vessels may be weakened by fatty degeneration. In either of these conditions slight

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causes will produce hæmorrhage. Unfortunately, the author gives no data by which this form can be distinguished from bleeding erosions high in the os.

Ergot in small doses, and opium, should be administered, but if they are ineffectual and the loss of blood is reducing the woman, no time should be lost in inducing labor and clearing out the uterus.

6. Bleeding from accidental separation of the placenta. Hæmorrhage from this cause may be either external or internal and concealed. In either case the uterus should be emptied without delay.

Placenta prævia the author merely referred to as the remaining cause of hæmorrhage during pregnancy.

Thyroid-grafting in Myxœdema.—Since the intimate connection between the destruction of the thyroid and the production of myxœdema has been generally known, there have been various suggestions made for the relief of myxœdematous patients. MR. VICTOR HORSLEY has shown that it is quite possible to graft the thyroid on the peritoneum in some animals, and has suggested that some similar operation might be attempted in man. M. Lannelongue has made an attempt to carry out this suggestion on a little girl with myxœdema, for whom nothing better could be expected than a chronic cretinoid condition (*Le Progrès Médicale*). A thyroid gland was taken from a young sheep, and two-thirds of it grafted on the child's thorax just below the right breast. The operation presented no difficulty, and on March 7th, when Lannelongue reported the case to the Société de Biologie, the graft had taken firm hold and was doing well. What may be the prognosis of such a case only time can determine. M. Chauveau thought it probable that the foreign tissue would be absorbed, but M. Dastre considered this unlikely with a blood-gland like the thyroid, although it was the common fate of other tissues.—*Practitioner*, May, 1890.

Incontinence of Urine in Children.—Dr. A. JACOBI writes as follows upon the treatment of incontinence of urine in children (*Archives of Pædiatrics*, June, 1890):

Attention must be paid to the capacity of the bladder. In every case, particularly in the evening, the quantity of fluid should be restricted. The sigmoid flexure and the rectum must be empty in the night, and the patient should be encouraged to evacuate both bladder and rectum before retiring. After a few hours' sleep the children ought to be taken up and roused sufficiently for both purposes.

Muscular debility of the neck of the bladder requires general and local stimulation. Strychnine or other preparations of nux vomica prove effective, to a certain extent, by improving both the general innervation and the appetite; in desperate cases an occasional subcutaneous injection into the perineum (gr. $\frac{1}{40}$ to $\frac{1}{16}$) has rendered good service; an ointment of one part of extract of nux vomica in from ten to sixteen parts of fat, introduced into the rectum, in pieces the size of a coffee or lima bean, several times daily, will also act well and can be continued for some time. The same indication is fulfilled by ergot, the fluid or the solid extract of which may be employed internally. The interrupted electrical current is perhaps the most powerful local stimulant; one of the electrodes must be applied to the perineum, the other to the hypogastrium or the lumbar region. It is not advisable to apply one pole to the interior of the urethra or bladder, because of the danger of urethritis and cystitis.

Whenever there is oxalic acid or sugar or an excess of urates and phosphates in the urine, the source of the disturbance must be attended to. The hyperæsthesia of the bladder, complicated or not with catarrh, requires belladonna or its alkaloid. In many cases a single evening dose of extract of belladonna (gr. $\frac{1}{4}$ to $\frac{1}{2}$ to 1) or sulphate of atropine (gr. $\frac{1}{100}$ to $\frac{1}{75}$) answers well, sometimes to an unexpected degree. Bromide of potassium (grs. vj to xxv), camphor (gr. ij to v), fluid extract of hops (℥ iv to x), or the elixir humuli of the National Formulary in teaspoonful doses, given at bedtime, are also useful.

Irritability of the neck of the bladder and the prostatic part of the urethra has been treated by Henry Thompson with cauterization by means of a two per cent. solution of nitrate of silver. A solution of 1 to 1000 will be found sufficient, or a solution of tannin or alum 1 or 2 to 100. A still better plan is to introduce either an elastic catheter or a metal sound into the bladder, every few days, for two or four minutes. A few drops of a solution of cocaine instilled into the urethra a few minutes before the insertion of the instrument will in many cases render general anæsthesia superfluous.

Formulæ for Intestinal Antiseptics.—DUJARDIN-BEAUMETZ recommends salicylate of bismuth as an intestinal antiseptic, and gives it according to the following formulæ:

1. ℞.—Salicylate of bismuth, Magnesia, Sodium bicarbonate } of each, 2½ drachms. —M.
   Divide into 30 powders.

2. ℞.—Salicylate of bismuth, Prepared chalk, Phosphate of lime } of each, 2½ drachms. —M.
   Divide into 30 powders.

3. ℞.—Salicylate of bismuth, Beta-naphthol, Powdered charcoal } of each, 2½ drachms. —M.
   Divide into 30 powders.

4. ℞.—Salicylate of bismuth, Salol, Powdered charcoal } of each, 2½ drachms. —M.
   Divide into 30 parts and administer in capsules or wafers.—*Therapeutic Gazette*, May 15, 1890.

An Enormous Vesical Calculus.—BRIGADE-SURGEON BARTER, of Nagpore, reports the case of a broken-down man who applied to him for the removal of a vesical calculus (*Indian Medical Journal*, March, 1890). A full-sized lithotrite was introduced, but could not be made to grasp the stone. The lateral perineal incision was then made, but it was impossible to extract the stone through this opening, and the suprapubic operation was finally resorted to. The stone weighed nineteen ounces five drachms, and was ten inches in circumference. The patient died forty-eight hours after the operation.

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SATURDAY, MAY 31, 1890.

INTESTINAL OBSTRUCTION FOLLOWING HYSTERECTOMY.

ONE of the most annoying and dangerous sequelæ of abdominal and pelvic operations is obstruction of the intestines resulting from adhesive inflammation. After laparotomy, it not infrequently happens that the patient, after recovering from the primary operation, has repeated attacks of pain, with rise of temperature and abdominal tenderness. In some cases these symptoms disappear after free catharsis and counter-irritation over the abdomen. In others, however, the affection is not so easily cured, and to relieve the patient a second operation is necessary. Thus, in a case recently observed, the removal of the tubes and ovaries was followed by apparent recovery, but some weeks after operation abdominal pain, high temperature, and tenderness rendered a second opening of the abdomen necessary. Intestinal adhesions were separated, and the abdomen was allowed to remain open sufficiently to enable the operator to inject repeatedly a weak solution of boro-glyceride into the abdominal cavity. Although the patient was extremely ill, recovery finally ensued.

In the *American Journal of Obstetrics* for May, 1890, COE, of New York, calls attention to intestinal obstruction following vaginal extirpation of the uterus. The case was the second in his experience, and the tenth which he had been able to find recorded. The extirpation was successfully accomplished without the application of ligatures, the right ovary and tube being removed, the left remaining. Iodoform gauze was used as a tampon and, to prevent prolapse of the intestine, was pushed higher up than usual. The patient did well until the evening of the second day, when the abdomen became distended, the temperature elevated, and the pulse increased in frequency. Fæcal vomiting determined the necessity for laparotomy. Two or three coils of ileum were adherent to the edges of the peritoneal wound and were easily detached. There were no indications of peritonitis, and the edges of the womb felt healthy. Death followed from shock, and the autopsy showed that the principal point of obstruction had been in the lower eighteen inches of the ileum. The small intestine was generally collapsed, the large moderately distended. There were evidences of commencing peritonitis. Septic infection could not be recognized.

In discussing the case, Dr. Coe raises the question why the secondary operation is so often fatal when laparotomy for primary obstruction is not infrequently successful. He also questions whether an improvement in the technique of extirpation might not remove this danger. It has been observed that the danger of this sequelæ is reduced to a minimum if the peritoneal cavity is closed at the time of operation. This is done by suturing the peritoneum to the edge of the vaginal wound. In many cases, however, it is impossible to do this by reason of the narrowness of the field of operation. The stumps of the broad ligaments should be brought down and attached to the edge of the vaginal wound, which will place the sloughing tissues outside the peritoneum, and there will remain no raw surface in the pelvis to which a loop of intestine might become adherent. If adherence does occur, it can be satisfactorily treated only by laparotomy. This should be done as soon as possible, and without disturbing the patient more than is necessary. These cases, however, have manifested an unusual fatality after the secondary operation, and the complication of intestinal obstruction after vaginal hysterectomy must be regarded at present as fatal, and should stimulate further study and investigation on the part of those who perform these operations. It is, of course, needless to say that septic infection is the most frequent cause of inflammation, and that the first precaution is the securing of absolute asepsis.

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SOCIETY PROCEEDINGS.

THE AMERICAN MEDICAL ASSOCIATION.

Forty-first Annual Meeting, held at Nashville, Tenn., May 21, 22, and 23, 1890.

(Continued from p. 579)

THIRD DAY—GENERAL SESSION.

THE meeting was called to order by the President, Dr. Moore, at 10 A.M. Following this, the Rev. R. L. Cave offered prayer.

The chairman of the Nominating Committee, Dr. Eugene Grissom, submitted the following report of the names of the persons nominated by the Committee on Nominations to fill the various offices in the Association for the ensuing year:

President.—W. T. Briggs, M.D., Tennessee.

First Vice-President.—C. A. Lindley, M.D., Connecticut.

Second Vice-President.—R. C. Moore, M.D., Nebraska.

Third Vice-President.—H. C. Wyman, M.D., Michigan.

Fourth Vice-President.—L. P. Gibson, M.D., Arkansas.

Treasurer.—R. J. Dunglison, M.D., Pennsylvania.

Permanent Secretary.—W. B. Atkinson, M.D., Pennsylvania.

Librarian.—C. L. Richardson, M. D., District of Columbia.

Trustees of Journal.—J. B. Hamilton, M.D., District of Columbia; J. V. Shoemaker, M.D., Pennsylvania; D. E. Nelson, M.D., Tennessee.

Judicial Council.—X. C. Scott, M.D., Ohio; W. F. Peck, M.D., Iowa; J. A. Lane, M.D., Kansas; J. H. Murphy, M.D., Minnesota; J. J. Happel, M.D. Tennessee; D. J. Roberts, M.D., Tennessee; A. Garcelon, M.D., Maine.

San Francisco, California, was chosen by the committee as the place of next meeting. Date, first Tuesday in May, 1891.

E. L. Shurley, M.D., of Michigan, was appointed to give the Address on General Medicine.

Joseph M. Mathews, M.D., of Kentucky, Address on General Surgery.

W. L. Schenck, M.D., of Kansas, Address on State Medicine.

The Convention adopted the report of the committee, substituting, however, Washington, District of Columbia, for San Francisco, California, as the place of meeting in 1891.

Dr. W. C. Patterson, M.D., was appointed chairman, and C. H. A. Kleinschmidt, M.D., secretary of the local committee.

ADDRESS ON GENERAL SURGERY.

In the address on General Surgery by DR. SAMUEL LOGAN, of New Orleans, a very careful synopsis of recent surgical progress was given. The author summarized the conclusions of the famous Hyderabad Chloroform Commission, and contrasted with their results the findings of Dr. H. C. Wood and Dr. H. A. Hare, both of Philadelphia, who state that though pariah dogs may perish from chloroform-poisoning by primary respiratory failure, experiments on an equal number of American dogs show that in them heart failure first appeared. The speaker stated that further investigation, and particularly large numbers of careful clinical observations, were necessary before the question could be settled. He particularly cautioned against giving chloroform vapor in concentrated form, and against continuing the administration when there is the slightest embarrassment in breathing. Gradual introduction of the vapor is the golden rule in using this agent. Allusion was made to recent deaths following the administration of chloroform, and to experimental research showing fatty degeneration of the heart in such cases. Local anæsthesia was briefly discussed, then antiseptics, particular attention being given to Lister's double cyanide gauze, introduced into this country by Professor J. William White, of Philadelphia. The dry method of wound treatment was advocated on the ground that prompt primary union followed in all suitable cases; drainage was advocated only when the surgeon could not be sure that the wound was aseptic, and where, through difficulty in producing close approximation, a cavity was left for the accumulation of fluids. In cerebral surgery the speaker was greatly influenced by von Bergmann's valuable monograph upon this subject. The skull should not be opened except where there is a positive diagnosis, and even then, in case of tumor, the outlook for the patient is gloomy. A brilliant future was predicted for spinal surgery and a tribute paid to the writings of Professor J. William White upon this subject. Abdominal surgery was dwelt upon at length. The speaker, alluding to the curative effect of abdominal section *per se*, not only in cases of tubercular peritonitis, but also where large tumors, such as uterine myomata, were present, Appendicitis and its sequelæ were considered, and an operation for relief of relapsing cases in the interval of attacks was advised only when these attacks were increasing so much in frequency and severity as to cause fear of perforation.

ADDRESS ON DIETETICS.

The address of DR. E. A. WOOD, Chairman of the Committee on Dietetics, then followed.

The speaker pointed out the evil results which follow the unguided administration of food to children. Many persons in the white race of this country are weak and poorly developed, with small bones and bad teeth. The jaws and teeth of children should receive their proper exercise, in order that they may attain their proper development and serve their proper function in the process of digestion.

Starch foods washed into the stomach without admixture with saliva are not digested. The average child fed on firm food requiring mastication will grow up with strong, square jaws, and will become a vigorous and well-developed adult. The speaker exhorted the medical profession to come to the rescue, and instruct parents how to feed their children.

The Committee on Dietetics reported through Dr. Frank Woodbury, of Philadelphia, and offered the following motion:

Resolved, That the word "Physiology" be taken away from Section I., and that a new section be formed called the "Section on Dietetics and Physiology."

The motion was carried.

A report followed from the Committee on American

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Colleges, advising preliminary examinations for admission to medical schools, annual examinations, and a three years' course.

The Convention accepted the report, and passed a resolution heartily endorsing the sentiments expressed therein.

Dr. Moyer, of Chicago, offered the following:

Resolved, That at future meetings of this Association the business of the general session shall be conducted entirely from the floor of the house, and no one occupying a seat on the platform, excepting the Secretary, shall be recognized by the President; provided, however, that nothing in this resolution shall be construed so as to prevent the Chairman from inviting members to address the Association from the platform.

Dr. Davis moved to amend by adding "and the Chairman of the Committee of Arrangements" after the word Secretary. Carried.

SECTION OF DISEASES OF CHILDREN.

The meeting was called to order at 2.30 P.M. by J. A. Larrabee, M.D.

A paper was read by DR. W. L. STOWELL, of New York, on "The Significance of High Temperature in Children."

The author summarized his article as follows:

The child's temperature is normally higher than that of the adult. The temperature may be very high from apparently trifling causes, usually nervous impressions or reflex disturbance. All the febrile diseases have what might be called their normal range of temperature, and it does not indicate treatment unless excessive or out of its normal course. Antipyretics are to be used with caution, lest while they lessen fever they, by weakening the heart, lessen the chance of favorable termination of the disease.

The temperature may often be lessened indirectly by heart tonics, general tonics; and food.

The tendency of nutrition in childhood is toward growth and repair, not degeneration, hence careful nursing and feeding will do more toward a favorable result than converting the child into an assaying pot for drugs.

Dr. Watson thought that we are too much inclined to treat the fever and not the cause of it. He is never alarmed at high temperature unless it becomes excessive or heart trouble is present. The high temperature sometimes produces a weak heart or some nervous manifestations. In these cases he uses small doses of antipyrine combined with digitalis. In other cases he prefers sponging the body with cold or luke-warm water. Special care should be given to diet.

The gastric juice in high temperature undergoes such changes that digestion and proper absorption of drugs cannot be expected. It is then far better to resort to sponging.

Dr. Woodbury, of Philadelphia, said that he tries to differentiate cases of fever into those where the temperature is a result of some previous excitement in which a nervous element exists, which cases he treats by quiet and cool applications; and cases due to some poison in the blood in which the primary indication is to get rid of the cause. Is the fever an effort of nature to get rid of some offending force? Fever is a form of energy, its source being food and oxygen. This energy is expended in three ways: First, it serves to keep up the temperature of the body; second, it keeps up the energy demanded to perform the involuntary actions of the body; and, thirdly, it is expended in keeping up the voluntary movements. Foods should be used which can be digested in the small intestine. The suggestion recently made in some of the foreign journals to allow patients to cool off uncovered in a cold room is not advisable in the exanthematous diseases.

Dr. Brush, of New York, stated that he does not believe the thermometer to be an instrument of such accuracy as is generally believed. He thinks there is an *expression* in temperature shown often by the manner in which the mercury rises. When it ascends rapidly, shoots up, so to speak, in children, he knows that there is not going to be much trouble with the case, but when the mercury ascends slowly but steadily, danger can be anticipated. He finds that a warm, stimulating injection in these cases often has a most beneficial result.

Dr. Larrabee stated that he does not pretend to treat, but that he *manages* fever. Severe hyperpyrexia, of course, must be controlled. His method is to wring out a sheet in hot water, and then when it is warm, to envelop the child with it and give an enema.

The Section now adjourned to meet with that on Laryngology to discuss diphtheria and croup.

DR. CARL SEILER, of Philadelphia, in opening the discussion on the duality of croup and diphtheria said that in his belief they were certainly different diseases. In diphtheria there is always a peculiar characteristic odor about the body and a marked difference between the membrane found in the two states. Again, diphtheria comes suddenly, while croup develops slowly. The poison of diphtheria varies very much in its effects in children of the same family sick at the same time.

DR. PORTER, of St. Louis, thought duality not yet proved and recognized no such thing as membranous croup as distinct from diphtheria. He did not believe that diphtheria always came on suddenly, and had seen cases develop very slowly. There is no difference in the membranes, and difference in the color of the membrane has nothing to do with the diagnosis.

DR. JACKSON, of Syracuse, thought that diphtheria was purely a local infectious disease. He has seen many cases where the pharynx was clear and the membrane could only be found in the larynx, but primary laryngeal diphtheria often ascends to the pharynx. It may even ascend from a diphtheritic bronchitis. As to symptoms, he thought that the characteristic odor was not always present. The Germans make a pathological difference between croup and diphtheria. When the membrane lies simply upon the surface and can be easily coughed up or dislodged, and when it is incorporated with the surface upon which it lies by infiltration. If a case shows constitutional septic infection and gives rise to other cases, we must look upon it as one of diphtheria. In no disease is the temperature less of a guide as to diagnosis and prognosis than in diphtheria. In conclusion the speaker stated that he did not recognize the difference between membranous and diphtheritic croup.

DR. E. R. EARLY, of Pennsylvania, then read a paper on "Croup," in which he gave the history of the disease, its clinical features and treatment. His treatment con-

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sists of a primary emetic, gentle rubbing and friction of the body, large and repeated doses of quinine, and in hyperpyrexia the administration of the chlorate of potassium or sodium. He never gives calomel or any remedies which would weaken the system.

Dr. H. D. Didama, of Syracuse, thinks that there is a difference to be recognized between croup and diphtheria.

Dr. W. H. Daly, of Pennsylvania, reiterated his own plan of treatment and called upon the profession to give it a trial. He gave his method as follows: To a child three or four years of age he gives five grains of pure unmixed calomel, and repeats the dose in from one to two, or three hours, or until free catharsis follows—the stools should be of a light green pea-soup color. Then he lengthens the interval of the dose, being careful not to diminish the amount, but being careful to keep up the mild catharsis for at least one or two days. Ptyalism and depression rarely follow this treatment; the membrane exfoliates and re-forms with less and less readiness. At the same time care should be given to diet, which must be light but highly nutritious. The patient must be kept in a recumbent posture until convalescence is well established.

Dr. Shimwell, of Philadelphia, speaking of operative measures, said he had had some experience with intubation and much preferred it to the more serious operation of laryngotomy. He advised early interference.

Dr. Brush said that he had had only three successes out of thirty-three cases, but that he was still in favor of the operation. It is often most difficult to feed the child, but this can be overcome by the use of a long-tubed nursing bottle and letting the child lie flat on the bed without any pillow. It will almost invariably suck.

Dr. H. C. Scott advocated a plan of local treatment with which he has had great success. He uses a saturated solution of iodoform in ether. Applications should be made twice daily with a brush or by spray. It stops pain within five minutes and he finds the membrane does not extend but soon exfoliates. Dr. Scott has cured many cases of diphtheritic conjunctivitis by the use of this method.

Friday, May 20, 1890.—No papers were read in the Section on this day, the only business being the election of new officers. Dr. William Perry Watson, of Jersey City, was made Chairman, and Dr. H. A. Hare, of Philadelphia, Secretary.

SECTION OF PRACTICE OF MEDICINE, MATERIA MEDICA, AND PHYSIOLOGY.

J. H. MUSSER, M.D., of Philadelphia, *Chairman.*

The following papers were read by title: "Influenza," by Dr. J. B. Johnson, of Washington, D. C.; "Treatment of Bright's Disease with Chloride of Sodium," by Dr. A. Memminger, of Charleston, S. C.; "Abuses of Antipyretic Medication," by Dr. S. Solis-Cohen, of Philadelphia; "Note on a Case of Fatal Leukæmia following Prolonged Lactation," by Dr. W. W. Jaggard, of Chicago, Ill.; "Facial and Thoracic Deformities Incident to Obstruction of the Naso-pharynx," by Dr. W. E. Casselberry, of Chicago; "Antisepsis," by Dr. Hiram Corson, of Conshohocken, Pa.; "Cleanliness and Pure Air in Maternity Work," by Dr. Joseph Price, of Philadelphia; "The Ocular Complications of Malaria," by Dr. George E. de Schweinitz, of Philadelphia; "Continued Fever of Charleston, S. C., or Gastro-hepatic Fever," by Dr. Thomas Legare, of Charleston, S. C.; "Chemical and Bacteriological Examination of Water Supposed to have Caused Typhoid Fever," by Dr. Victor C. Vaughan, of Ann Arbor, Mich.; "Naphthol in Typhoid Fever," by Dr. L. Wolff, of Philadelphia.

Following these DR. J. M. FRENCH, of Cincinnati, Ohio, read a paper on "Oxygen; its True Value as a Therapeutic Agent."

DR. E. L. SHURLEY, of Detroit, then read a paper on "The Local Treatment of Phthisis Pulmonalis," in which he advocated the local use of creasote by a modification of insufflation and forced inspiration.

In discussion, Dr. W. F. Bateman, of Indiana, thought prophylaxis should be our chief study, but that when phthisis was already developed roborant treatment gave the best results.

Dr. Powell, of Tennessee, said he had used creasote in his own case, but without benefit.

Dr. McIntosh, of Georgia, thought local treatment relieved only the catarrhal symptoms.

Dr. Bailey looked on the method advocated as marking a distinct advance in therapy.

Dr. de Saussure, of Charleston, S. C., had found benefit from local treatment in phthisis, which he distinguished from tuberculosis.

Dr. Shurley, in closing, said he had purposely not considered tuberculosis, and that he always combined general with local treatment.

A paper on "Functional Albuminuria" was then read by DR. WILLIAM B. DAVIS, of Cincinnati. This was a very able and exhaustive essay, in which the subject was considered in all its aspects. In one patient seen by the author, albuminuria persisted for five years without other symptoms of disease, the albumin sometimes amounting to one-tenth the bulk of the urine on boiling. In another case, after alcoholic excess, the urine became solid on boiling.

Dr. V. C. Vaughan, of Ann Arbor, said that he had systematically examined the urine of 3000 students, and in only ten had he found albumin. He looked on three tests only as reliable—viz., heat and nitric acid, overlaying, and the ferrocyanide and acetic acid test. All the other methods gave reactions with many substances beside albumin, such as quinine and other alkaloids, etc.

He thought in all cases in which albuminuria was more than temporarily present, renal lesions followed in time.

DR. HAROLD N. MOYER, of Chicago, then read a paper entitled "Hydrophobia, a Clinical Study, with Statistics and Reports of Cases." The speaker objected to the word hydrophobia as misleading, and describing only a symptom and not peculiar to the disease under consideration. He preferred the term rabies.

The author's conclusions are, that there is a substantial identity between rabies, as seen in this country and Europe; that it is not a psychosis, and bears little or no relation to diseases of the mind.

Dr. A. Lagorio, of Chicago, then read an exhaustive account of Pasteur's investigations and methods.

Dr. Kiernan, of Chicago, said he believed that so-called hydrophobia was really lyssophobia, and he denied the existence of the former as a distinct infectious disease.

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Dr. Scott, of Cleveland, Ohio, said that numerous examples of rabies could not be gainsaid, but he thought that Pasteur's statistics showed less success with rabies than with lyssophobia.

Dr. Bulkley, of New York, described the case of a child bitten in the face by a rabid dog four years ago, and treated by Pasteur, and showed the great candor and honesty of Pasteur in regard to his statistics.

Dr. Sears, of Texas, mentioned the "polecat-origin" theory of rabies, and said that he knew from experience the reality of rabies as a disease.

Dr. N. S. Davis, of Chicago, said he had treated but one case of hydrophobia, and in that it was impossible to find the external lesion. He used applications of carbolic acid and hyposulphite of sodium externally in cases of dog-bites.

Dr. Sawyer, of Cleveland, Ohio, showed a modification of the kymographion.

Dr. H. B. Baker, of Lansing, Mich., read a paper on "Malaria, and the Causation of Periodic Fevers, Showing their Dependence on Certain Meteorological Conditions."

Dr. George Dock, of Galveston, Texas, read a paper on "Researches in the Etiology of Malaria and the Microörganisms of Laveran."

A number of papers were read by title and ordered to be printed.

SECTION OF OBSTETRICS AND DISEASES OF WOMEN.

DR. MARIE WERNER, of Philadelphia, read a paper upon the "Fistulous Escape of Ligatures after Abdominal Operations" in which she advocated good drainage, and detailed the dangers following abdominal section. Dr. Werner described two cases in which the stump ligatures were thrown off by fistulous tracts on account of leaving the drain too long time in place—eight days in one case, three weeks in the other. Statistics were read to prove that nearly every operator has had just this trouble.

In discussion, Dr. Wathen, of Louisville, Ky., said that all who do abdominal work have seen such fistulæ, which are analogous to stitch-hole abscess. Such abscesses can best be obviated by using the smallest size twisted silk suture. He thought it unwise to place catgut or kangaroo tendon in the peritoneal cavity. He did not think it necessary to remove both ovaries when only one was diseased.

Dr. Reamy denied with warmth the theory that salpingitis was always due to gonorrhœa.

Dr. A. F. Currier, of New York, said that the surgeon should remove diseased parts only.

Dr. Howard Kelly, of Baltimore, has had forty pus cases. In his first operation he left the healthy appendages. In two years the remaining appendages required removal. In none of his cases, where one ovary was much diseased, did the second ever appear perfectly healthy. He advocated small silk ligatures.

Dr. Van Emen, of Kansas City, did not believe that because one ovary is diseased the other should be removed to anticipate future trouble. The speaker has never seen unilateral salpingitis.

Dr. Myers, of Fort Wayne, Ind., said that catgut ligatures are the muscular coats of the bowels and readily take up septic matter. He uses silkworm gut.

Dr. Reed, of Cincinnati, asked if Dr. Myers used silkworm gut as an intra-peritoneal ligature. To which Dr. Myers replied that he did. Dr. Reed was surprised at this, for silkworm gut is not absorbed, and is a dangerous foreign body ready to set up mischief.

Dr. Johnstone, of Danville, Kentucky, used American silk five years ago, but found that it formed abscesses. He now uses English silk and has no trouble. He has found all American silk more or less adulterated with flax and cotton.

Dr. J. Price, of Philadelphia, believed that fistulæ and discharge of ligature are due to imperfect work and not to the material used. Such accidents arise from not tying close to the uterus, and from leaving cheesy, broken-down matter behind. He was surprised that anyone should advise the use of catgut or silkworm-gut in the abdominal cavity. He always uses light, carefully prepared silk. The drainage-tube is usually not the cause of the discharge of ligatures, as the stump is some distance from the end of the tube.

Dr. Hoffman, of Philadelphia, objected to catgut ligatures. One would not leave a rubber ligature on a stump because it keeps up continuous pressure, and catgut acts in the same way. Silk is the ideal ligature. In operating, Dr. Hoffman believes that if a pus tube on one side be due to specific disease, the other tube should not be allowed to remain. He also said that Dr. Price removes both for a unilateral hydrosalpinx, for pus tubes frequently follow this disease.

Dr. Wathen said that physicians are frequently begged to save one ovary for child-bearing purposes after recovery, and that tubal trouble is seldom unilateral.

Dr. Reamy said that many patients with unilateral pyo- and hydro-salpinx bear children afterward. This ability is a test of recovery.

Dr. Price called Dr. Reamy's attention to a case said to have recovered and conceived, yet her husband had been castrated five years previously.

DR. E. E. MONTGOMERY, of Philadelphia, was unavoidably absent, and his paper upon "Extra-uterine Pregnancy" was read by title only.

Dr. Reed, of Ohio, spoke in favor of employing a stenographer for reporting the discussions, the cost to be borne by the Section. He moved that the amount be assessed *pro rata*. Carried.

The next paper was by DR. JOSEPH HOFFMAN, of Philadelphia, and was entitled "A Plea for the Adoption of the Traction Forceps." He said that these forceps should not be used to lessen the physician's work, but that in certain cases they will save both mother and child from injury. Old forceps are pressure instruments, and work upon the principle of fire-tongs. When there is much maternal pressure the force is great upon the fœtal head, and here we get the factor which causes the perineum to be torn. External forces, to be efficient, must act in the direction of the pelvic axis. The Tarnier modification is the latest and best form presented in which the centre of pull approximates the centre of the fœtal head. Dr. Hoffman exhibited several forms of forceps to the Section, and said that the Tarnier modification cannot rupture the perineum, because the traction rods fall within the blades of the forceps. Rotation determines the path in which the head will go. Axis-traction forceps give us a lower mortality-rate to the mother and child than any other instrument.

Dr. Joseph Price, of Philadelphia, in discussing Dr.

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Hoffman's paper, said that by using these forceps many large-headed children, which we formerly lost, could be saved. Dr. Price prefers the Hodge or Simpson blade. He agreed with Dr. Hoffman as to the use of axis-traction forceps, by the use of which fewer tears result, and fewer still-births.

Dr. Currier, of New York, said that any one understanding mechanics could see the great advantage of traction forceps, and that much was due to Dr. Hoffman for his lucid explanation of the forceps and their use.

DR. JOSEPH PRICE, of Philadelphia, read "A Retrospect of Pelvic Surgery." Time, he said, has greatly changed methods of diagnosis. The good surgeon now must know when to operate and what to operate on; in other words, in what cases operation would be of no avail to the patient. Ectopic gestation was formerly left alone. Now electricity or injections of morphine are being advocated to relieve the condition which only the knife can cure. Tubal troubles are still dubbed cellulitis by some. Electricity may alleviate the pain of these diseases, but cannot cure by removing the cause.

Are the so-called conservative surgeons safe? We do not attempt to cure abscesses or fibroid tumors outside of the pelvis by electricity. Why, then, use it for pelvic abscesses? Early operation was advised for neoplasms as well as for tubal disease. Too many surgeons fear and attempt to explain away unfortunate sequelæ by accusing instruments, tubes, etc., when the operator alone is at fault. Hernia, however, cannot always be avoided, even by the most careful. They are, therefore, excluded from the avoidable sequelæ.

The next paper was by DR. GEORGE E. SHOEMAKER, of Philadelphia, and was entitled "Drainage in Abdominal Surgery." Dr. Shoemaker said that the drainage-tube is of great advantage when hæmorrhage or active sepsis has occurred, but that the peritoneum can probably absorb all aseptic matter. Small and invisible bowel-perforations may occur and cause trouble if the tube is not used.

An objection urged against the tube is that it may aid in causing a hernia. This may be obviated by inserting sutures close to the tube; by keeping the patient in bed, and by causing her to wear a supporting band. Again, it is said that the tube permits septic material to enter the peritoneal cavity. The tube should be kept clear, and when removed replaced by a rubber drain. We should use the drainage-tube in all cases of doubt.

In the discussion of the papers of Dr. Price and Dr. Shoemaker, Dr. Bond, of St. Louis, gave his unqualified praise to both.

Dr. Hoffman said that he had put drainage to the most severe tests and agreed in every particular with Dr. Shoemaker. The speaker detailed a pus case lost, as he now believes, from not using a drainage-tube. The action of the tube depends on the fact that moisture attracts moisture and he suspected that the surgeons who condemn the tube do not understand its theory or proper care.

Dr. Myers, of Indiana, endorsed Dr. Price's paper, and strongly advocated drainage. Dr. Reed, of Ohio, also approved of drainage. In the forty cases of abdominal section in the Cincinnati Hospital since January 1st a drainage-tube was used in each. Some were removed in one or a few hours.

Dr. Hypes, of St. Louis, asked Dr. Price whether he advised early or late operation for ectopic gestation.

Dr. Price answered that the cases come into the "surgeon's hand as a rule after rupture; should they come before that he would operate at once."

Dr. Bond did not entirely agree with Dr. Price. He would operate at once only when the rupture takes place in the upper part of the tube and into the abdominal cavity, not when it ruptures into the broad ligament for then the child may live and develop. In dealing with the placenta in such cases, Mr. Tait ties the cord and abstracts blood by a hypodermic syringe; others leave the cord hanging out at the lower angle of the wound.

The Committee appointed on the previous day reported their minutes respecting the late Dr. W. H. Byford, long a member of this Section and Vice-President of the Association.

SECTION OF SURGERY.

DR. B. A. WATSON, of Jersey City, *Chairman*.

DR. J. G. CARPENTER, of Stanford, Ky., read a paper upon the necessity of early abdominal section in intestinal obstruction. The author stated that by Senn's method of gaseous insufflation obstruction could be readily and safely diagnosed. He strongly objected to the use of opium; would operate the moment obstruction was diagnosed, and would use every means to hasten operative procedures.

In discussion Dr. McComas, of Maryland, alluded to the great difficulty of diagnosis.

Dr. King, of Kansas City, Missouri, emphasized the importance of early operation in obstructive cases. He stated that the gas test will, at times, fail even in cases of wound of the intestine.

Dr. Price, of Philadelphia, attributed the delay in operation to the fact that these cases were first treated by physicians, who were slow to call in surgical assistance; he hoped the time would come when such cases would go directly to the surgeon.

Dr. Senn, of Milwaukee, advised immediate operation, not only *after* diagnosis, but as a means of diagnosis. In obstruction due to a paretic inflamed bowel he would restore the continuity of the intestinal canal by lateral apposition—since the increased vascularization of the gut walls will cause union even more rapidly than that which takes place in normal intestines. The condition of the gut is such that circular enterorrhaphy is absolutely unjustifiable.

DR. JOSEPH PRICE, of Philadelphia, then read a paper upon abdominal section and drainage for purulent peritonitis. He urged the necessity of immediate operation, stating that by other means the prognosis was hopeless. There were many recent illustrative cases of the truth of this opinion. Several cases were cited of both general and local true puerperal peritonitis, against which medical treatment had been unavailing, and all were undoubtedly saved by operation. A number of well-executed water-color paintings of specimens were shown.

Dr. Hoffman, of Philadelphia, stated that the important feature of Dr. Price's paper was the report of a series of cases which were regarded as uniformly fatal in medical practice. Treatment of large accumulations of pus by means other than operative must always be futile. The knife alone can afford relief.

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Dr. Edward Martin, of Philadelphia, stated that the ground that all cases of suppurative peritonitis were fatal if not subjected to the knife was not tenable. While thoroughly convinced that where pus was found immediate evacuation was indicated, diagnosis was frequently impossible. This was generally conceded, especially by men of the widest experience. In infants there was a form of purulent peritonitis which was exceedingly prone to discharge spontaneously through the umbilicus. Again, even gunshot wounds with extravasation at times terminated in abscess and spontaneous discharge. There were two distinct forms of peritonitis, one diffuse and fulminant terminating quickly in death, the other localized and slowly extending. In the latter the pus was shut off from the general peritoneal cavity by adhesions. These formed so rapidly that even ulcerative perforation sometimes resulted in simple abscess rather than in diffuse peritonitis. For the localized peritonitis incision into each collection of pus, with free drainage, was advisable rather than formal laparotomy. The adhesions were protective and should be most carefully respected. The pus collection could be diagnosed by palpation and percussion, and successful cases were on record where four or five operations were required before all collections were evacuated. The subject of irrigation was most important. Since toxic symptoms had followed the use of 1 to 1000 bichloride solutions, and since no antiseptic could destroy the germs lodged in the infiltrated tissues, such solutions should never be used. Hot, sterile water, or still better, hot normal saline solution, would do all that could be hoped from any form of irrigation. Where toxic substances were used in solution they should be preceded by water or saline solution, since it was found that absorption from the peritoneal surfaces was exceedingly rapid for the first few minutes, and ceased when the blood was fully charged. After this, antiseptics could be used with impunity in so far as systemic results were concerned.

Dr. Carpenter, of Kentucky, said that he had seen many of Dr. Price's cases, of which those cited were typical examples.

Dr. Price stated that surgical curiosities should not be used as an argument against established surgical procedure. The matter of diagnosis was a matter of apprenticeship to this particular branch of surgery. Probably no surgeon who was in the war could reproach himself for having opened an abdomen, but how many could look back with remorse to fatal cases which might have been saved by operation!

The management of major amputations was then ably discussed by DR. JOHN A. WYETH, of New York. His address opened with the statement that the prevention of hæmorrhage is of chief importance in these operations, and after this comes the preservation of as much of the limb as possible. The author's method of bloodless amputation of the hip is as follows: An Esmarch bandage is first applied, not including diseased areas for fear of driving septic matter into the circulation. Two steel mattress-needles, each three-sixteenths of an inch in diameter and a foot long, are next introduced. The point of one is introduced an inch and a half below the anterior superior spine of the ilium and slightly to the inner side of this prominence, and is made to traverse the muscles and deep fascia, passing about half-way between the great trochanter and the iliac spine, external to the neck of the femur, and through the substance of the tensor vaginæ femoris, coming out just back of the trochanter. The point of the second needle is entered an inch below the level of the crotch, internally to the saphenous opening, and passing through the adductors comes out about an inch and a half in front of the tuber ischii. The points are protected by corks, to prevent injury to the operator's hands. A piece of strong rubber tubing is now wound very tightly above the fixation needles. The Esmarch bandage is removed and a circular incision made five inches below the tourniquet. The skin and subcutaneous tissues are now dissected up to the level of the lesser trochanter, the muscles cut squarely through, and the bone sawed off. The remaining portion of the bone is now readily removed by dividing its muscular attachments. If shock is great, enucleation may be delayed for several days. In cases of osteomyelitis, after scraping the canal with Volkmann's spoon, a long drainage-tube without holes is introduced throughout the length of the diseased canal. Through this canal the cavity is kept washed out with antiseptic solutions till granulations are formed. This often obviates the necessity for amputation.

This paper was discussed by Dr. Harmer, of Wisconsin, Dr. Watson, of Jersey City, and Dr. Ransohoff, of Cincinnati. It was pointed out that the method was somewhat similar to those of Trendelenberg and Furneaux Jordan.

Dr. Harmer stated that he had seen amputation done in precisely the same manner as that suggested by Dr. Wyeth, bayonets being used in place of needles.

In closing the discussion, Dr. Wyeth stated that no claim was made for the originality of his method in its entirety. His paper contains allusions to other similar methods, but certain details in his technique were original.

The next paper was by DR. H. O. MARCY, of Boston, upon "The Surgical Treatment of Biliary Obstruction." Several cases were carefully reported, and a *résumé* of the whole subject of the surgical management of this class of cases was given.

The author thinks that cholecystotomy should be performed in every case of wound or perforation of the gall-bladder, in empyema of the gall-bladder, in cystic dilatation, and in cases of biliary obstruction not amenable to medical treatment. Cholecystectomy is indicated only in those cases where the gall-bladder and its duct have undergone such marked pathological changes that there is no possibility of the function of this viscus being restored, yet even these cases will often be as surely and much more safely treated by suturing to the abdominal wall and subsequent drainage. When the gall-bladder is resected the entire secreting membrane of the cyst must be removed, and the edges must be brought together by a continuous sero-serous suture. When a stone is found in the common duct, it may often be dislodged by gentle pressure and subsequently removed from the gall-bladder. When this is impossible, crushing with well-padded forceps is indicated. If this procedure is contraindicated, either cessation from all further operative procedure or incision into the duct, with suture after the removal of calculi, will be indicated. In one case reported by the author the common duct was in-

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cised, the edges of the wound everted, and the stone removed. The wound was then united by three rows of sutures, one for the thickened mucous membrane, one for the peritoneal edges, and, finally, sero-serous stitches were applied, folding-in the edges of the wound. The continuous kangaroo-tendon suture was used. Where the common duct is permanently occluded from inflammatory or other changes, the cystic duct remaining open and the gall-bladder being not particularly disorganized or adherent, a permanent fistulous opening into the intestine may be considered.

In performing the operation of cholecystotomy it must be borne in mind that the gall-bladder walls are very thin, hence all manipulation must be conducted gently. Under some circumstances suture of the gall-bladder to the parietal peritoneum will be advisable before opening the former. If a fistulous opening is determined upon, a soft-rubber drainage-tube should be inserted, and the wound should be dressed with absorbent material. The author used with advantage a soft-rubber double tube, inserted through a diaphragm about the size of a half dollar. If the common duct remains patulous, the fistula will close spontaneously. Aseptic animal sutures should be used, not only because they are far safer than silk, but because they possess the great advantage of causing an abundant proliferation of connective tissue along the tracks of the buried sutures.

In discussing this paper Dr. Senn, of Milwaukee, said that he had found in two cases a calculus in the common duct, surrounded by malignant disease. In one the calculus was replaced by taxis and the abdomen closed. The patient recovered but perished ultimately of malignant disease. In the other case the calculus was removed by incision, but this had no effect in restoring the continuity of the passage. An external biliary fistula was established in this case.

Dr. John B. Deaver, of Philadelphia, removed in one case fifty-two stones, leaving a fistula which subsequently closed. He assisted at two other operations where the stone was in the common duct. He preferred incision in the right linea semilunaris and also would advise dividing the operation into two portions—first simply suturing the gall-bladder to the parietal peritoneum, then opening after firm adhesions had been formed.

DR. DAVID BARROW, of Lexington, Kentucky, reported two cases of gunshot wound of the abdomen. In the first the wound was near the umbilicus. Shock was only moderate, and section was performed as soon as possible. The wound of entrance into the peritoneal cavity was found, together with six wounds of the intestines. Irrigation and drainage were employed, and though the patient was profoundly shocked, convalescence was fairly rapid.

The second case occurred in the person of a lad of thirteen years. The wound was inflicted at 4 P.M., by a 32-calibre revolver. The operation was performed four hours later, though there were no symptoms indicating serious injury. The wound of entrance was two inches to the right of and one inch below the umbilicus. A four-inch incision, including the bullet wound, was made. Five intestinal perforations were found, two of the small and three of the large intestine. These wounds were closed by the Czerny-Lembert suture, the operation lasting one-half hour. In two days vomiting set in, and the abdomen was opened and irrigated. On the third day the patient died from septic peritonitis. All the wounds were found tightly closed. A drainage-tube should, however, have been left in the abdominal opening. In all Dr. Barrow has operated on six of these cases with two recoveries. He advised against delay after gunshot wounds, since most patients perish from this cause. Thorough irrigation is essential in all these cases, the best method of securing this being that of Dr. Joseph Price, of Philadelphia, who uses a funnel and a large rubber tube through which hot water can be poured, the force and rapidity of the stream being regulated by the elevation of the funnel. In conclusion he stated his belief in the following propositions:

1. All gunshot wounds of the abdominal cavity should be treated by laparotomy, and this should be the rule, even though the viscera escape injury. Absolutely no reliance can be placed on symptoms.

2. Penetration should be determined by probing, or by enlarging the track of the bullet.

3. Since shock from anæsthesia and manipulation is marked, all operative procedures should be hurried as much as possible.

4. In extreme shock the open peritoneal method should be adopted rather than any procedure requiring more time and manipulation.

5. Since exsection has always been followed by death, anastomosis should replace this operation. By omental grafts intestinal tissue may be saved and suture lines may be strengthened.

6. In liver wounds, after stopping hæmorrhage, it is sometimes well to drain by a separate glass tube, as was done by Dr. Mordecai Price, of Philadelphia. The kidney, if wounded and bleeding, must be removed.

7. The hydrogen test should be used just before the closure of the abdominal wound, to detect any intestinal lesion which may have been overlooked.

8. Irrigation should always be employed and should be copious and thorough, since it combats shock and septic peritonitis. The drainage-tube should not be omitted.

Dr. Senn did not think that every perforative wound of the abdomen indicates laparotomy. The indication for laparotomy is hæmorrhage, as shown by the classical symptoms.

In a recent case, where exploration along the bullet track indicated perforation, the hydrogen test was applied, and proved that the intestinal canal was intact. On passing the catheter, however, the urine was found charged with blood. Conservative treatment was adopted and the patient recovered.

In another case, aged six years, a 38-calibre bullet entered the belly near the umbilicus. The track was explored, and penetration was proven. The colon and stomach were each insufflated, and found uninjured, though both of these organs were in the line of fire. The opening was then enlarged and the small intestines were examined and found intact. No drainage was employed. The child recovered, and would have recovered still more satisfactorily without meddlesome interference. In six cases of abdominal wounds which he has seen, two were not accompanied by visceral wound. From a medico-legal standpoint the question is one of

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great importance. Had the first case died, the question would have been: Did the patient perish from the injury or from the surgeon's knife? In his own experience the gas test has never failed. In a patient wounded by a 22-calibre ball, one perforation was found, but in spite of constant escape of gas the other perforation could not be discovered. By inserting the pipe through the first wound, however, and insufflating, the other wound was readily found. It was not seen before, because it was directly between the mesenteric folds.

This method of gaseous insufflation requires skill and constant drilling. After three years of use its inventor felt that he was but just beginning to be familiar with its proper application; and without great experience in the use of this method no surgeon should presume to criticise it.

Dr. Barrow, in conclusion, stated that there were many conditions which the hydrogen gas test failed to indicate. The immense distention induced by the gas was frequently an embarrassing feature in the case. The danger of exploration he considered infinitely less than that of undetected wound.

Dr. Marcy, of Boston, asked whether other gases might not be used, such as oxygen. He stated that he himself had employed the latter substance.

DR. J. LEE MCCOMAS then reported the following case of gunshot wound of the brain: The patient, aged sixteen years, right-handed, was shot with a 22-calibre short ball. It passed through the frontal sinus downward and backward to the left, and the brain protruded and bled. The probe passed in three inches. The wound was disinfected and cleansed. Ergot and ammonia were given, and the patient gradually reacted and passed into a condition of cerebral irritability. As his condition improved it was found that he was completely aphasic. This seemed to be mainly motor, and gradually improved. Some two weeks after the injury it was discovered that he was suffering from agraphia. It was difficult to determine what symptoms were due to extravasation and what to the presence of the ball. Some six months after the injury the patient was found pursuing his trade of house-painting. His family stated that beyond an increased irritability of temper, they could detect no further signs of brain degeneration.

Friday morning.—The session was opened by some remarks on intubation by DR. BELL, of Indiana. The speaker stated that the operation could be so quickly and easily performed that no gag was necessary, and that the main difficulty was that of feeding.

The treatment of flat-foot by Thomas's method was next considered by DR. W. R. TOWNSEND, of New York. The method consists, briefly, in so padding the sole of the shoe that a moderate varus is produced. This padding should extend from the extremity of the heel to the base of the great toe. A "building up" of one-quarter or one-half inch is usually sufficient.

Flat-foot is characterized by pain, especially on going up-stairs, by stiffness, and by deformity, accompanied by so much congestion of the soft parts that caries is frequently suspected. In mild cases, even where there is slight spasm and great pain, the treatment described is perfectly satisfactory; in severe cases accompanied by sub-luxation, marked spasm, and great tenderness, this treatment alone is of little avail. After more radical measures, however, even the most aggravated cases are benefited by continued use of the wedge-shaped sole.

Dr. John B. Deaver complimented Dr. Townsend on the excellent classification he had given in cases of flat-foot. The simplicity of the method commended it. He had at times been compelled to dissect out diseased synovial sheaths in cases of neglected valgus, and forcibly to break adhesions. As an after-treatment, he could warmly commend this padded shoe.

Dr. Edward Martin stated that for several years he had been in the habit of using this shoe, and that it was peculiarly applicable to children just beginning to walk, since in them the original deformity had often not been aggravated by the weight of the body, and consequently is in its first or second stage. He had seen many cures from this method, but in cases complicated by partial luxation he applied the shoe only after more radical methods. The apparatus described was particularly valuable from the fact that it provided a species of passive motion at each step of the patient.

Papers upon "Fractures of the Base of the Skull," by DR. H. C. WYMAN, of Detroit, and "Abscess of the Prostate Gland and its Treatment," by DR. R. H. HARTE, of Philadelphia, were then read by title.

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, May 5, 1890.

THOMAS G. MORTON, M.D., IN THE CHAIR.

DR. O. H. ALLIS exhibited

AN IMPROVED ETHER CAN,

and said that he had often thought that if we could prevail on Dr. Squibb, who provides us with so much ether, to put it in different shaped cans, it would be a convenience. At the request of Dr. Allis the manufacturer had made a few specimen cans which were presented. They were flat, hardly larger than a cigar-case, and held one-quarter of a pound of ether. The maker objects to them because they cannot be washed or made so conveniently, as those of the usual shape. If the Academy considered them an improvement, Dr. Allis thought it would be well to request the manufacturer to furnish cans similar to the specimen.

DR. THOMAS G. MORTON then reported a case of

PERFORATION OF THE VERMIFORM APPENDIX, PERITYPHLITIC ABSCESS, GENERAL PERITONITIS, SLOUGHING OF INTESTINE, ABDOMINAL SECTION; DEATH.

The patient, aged seven years, had always been healthy, never having been confined to bed on account of sickness. On Sunday, April 27th, he had a slight cold, for which a laxative was given; on Monday he was at play all day, and apparently quite well, but that night he was seized with intense abdominal pain, and constant vomiting. The abdomen became tympanitic and distended, the pain was general, and could not be localized; calomel, salines, and enemata produced no result.

The temperature fluctuated between 100° and 102°; during the succeeding four days there was no special change of symptoms, except progressive weakness.

On Sunday, May 4th, Dr. Morton saw the case in consultation. The symptoms were those of general perito-

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nitis, pulse was 120, temperature 101⅘°, abdomen greatly distended and tympanitic; no localized, but general abdominal pain; there was no tumefaction, hardness of tissues, nor swelling; rectal examination was negative. There had been no rigor or chill, and no sweat, and the only noticeable change on the abdominal surface was a distention of the superficial veins over the right iliac region.

The severe peritonitis, symptoms of bowel obstruction due probably to lymph adhesions, the intense pain, coming on suddenly and apparently without cause in a patient so youthful indicated the appendix as the source of the trouble.

Athough the patient's condition was exceedingly grave, Dr. Morton at once made a lateral abdominal section. The peritoneum was of an ashy gray color which indicated pus. On opening the abdominal cavity nearly two ounces of very fœtid pus escaped. On completing the incision, the parts were found matted together by recent lymph; a large part of the intestine was found in a gangrenous condition; the appendix was glued to adjacent structures, enormously enlarged just beyond its cæcal attachment, and evidently contained a very large foreign body; just beyond this the organ was perforated for an inch, while the distal end was nourished by the mesentery of the organ which extended its entire length. This was tied in several places, and the appendix was removed.

It was impossible to deal with the diseased bowel, so extensive were the adhesions, and so disorganized were the tissues. The abscess cavity was cleansed and a glass drain carried to the bottom of the pelvis. The wound was united as usual.

The patient sank gradually and died the following day.

The appendix was perforated and gangrenous to some extent. The foreign body proved to be a large intestinal concretion made up of many layers, and about the size of a cherry. The walls of the appendix were enormously thickened and distended, the distal extremity of the organ had been kept nourished through the mesentery.

This case is interesting from the fact that the symptoms at no time pointed to the appendix as the source of trouble; but taking into consideration the violence of the peritonitis, the intense pain, bowel obstruction, rapid march of the disease, and age of the patient, the probability was in favor of the appendix as the cause, and the diagnosis was made accordingly. The serious bowel complication indicated a probable fatal termination. It is hardly necessary to state that the earlier the diagnosis can be made in any such case the more successful will be the results of operation.

In the discussion which followed, Dr. De Forest Willard asked if there were any superficial indications pointing to inflammatory trouble? any œdema of the skin or thickening or hardening? and if the fingers could be carried into the iliac fossa?

He also asked if Dr. Morton had said that in young persons there were no other sources of peritonitis than traumatism and appendicitis, and if intussusception would not lead to peritonitis?

In reply, Dr. Morton said that there was no œdema, tumefaction, hardness, or tumor; the entire abdomen was tympanitic, percussion was clear, with no dulness anywhere; intussusception and volvulus were easily excluded from the diagnosis, so that disease of the appendix alone remained.

Dr. William Hunt said that he had understood that Dr. Morton was disposed to believe that disease of the appendix originated in the appendix and not from the foreign bodies coming from above. Why such a body should not cause the trouble he did not understand. The specimen showed an apparent nucleus. To say that this nucleus originated in the appendix seemed more improbable than that it should have passed from the alimentary canal into the opening of the appendix.

Dr. Morton stated that he had never seen anything of this kind.

Dr. Hunt said that there is in the Wood Museum a preparation, from nature, showing the presence of seeds in the appendix.

Dr. Morton said that the foreign bodies found so commonly in the appendix are fæcal in character. In some thirteen or more post-mortem examinations recently made at the Pennsylvania Hospital, in every case but one, such foreign bodies were found in the appendix. He did not know of a cherry or date stone, or any other such large substance, having been found in the appendix.

Dr. Willard said that one week ago he was called into the country, in consultation, to see a case presenting symptoms very similar to those mentioned by Dr. Morton. The patient was a man fifty years of age, who had been seized with violent pain three days before. This was attributed to drinking a glass of ice-water. All the symptoms of peritonitis, with tympanitic abdomen and vomiting of greenish matter, were present. There was considerable tenderness over the whole abdomen. The pulse was 88, and the temperature not over 100°, usually about 99°. The pain was not localized, and careful examination in the right iliac region revealed nothing. The existence of hernia at every possible site was most rigidly investigated. There had been neither chill nor sweating, and no indication of pus. The condition of the man being good, and as there had never been any fæcal vomiting, Dr. Willard felt that an operation was not justifiable on that day. The next day he was better, and the improvement continued during the week, though the eventual result cannot be stated. Here was a case presenting a series of symptoms which seemed probably due to appendix trouble, but as no positive indication of such lesion could be found, he was unable to convince himself of the justifiability of an exploratory incision, although he had made the journey prepared to operate.

CORRESPONDENCE.

NASHVILLE.

The Nashville City Hospital.

WHILE attending the meeting of the American Medical Association, the writer was given an invitation to inspect the only hospital in Nashville, which, as it was only recently opened, he was glad to do. The building is situated upon the highest ground in East Nashville, about one-half hour's ride by electric cars from the centre of the city. It is nearly one hundred yards from the high bluff of the river bank, and standing upon the piazza one can see over the whole town of Nashville to the

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east, directly up the valley of the Cumberland River for many miles to the west, Mount Olivet to the south, and to the far-away Tennessee hills to the north. The view is far-reaching in each direction, and to the east very beautiful.

The building itself is of brick with stone trimmings, is three stories in height and has about 250 feet frontage. The administrative department, in the centre, contains reception rooms for visitors and patients, an office for the superintendent and resident physicians, and the apothecary's department. The wards on both first and second floors extend north and south from this building, to which they are connected by long enclosed corridors. The capacity of the hospital is one hundred free patients, while twelve private rooms accommodate those who are able to pay. Each ward (and they are five in number) will receive twenty patients. The furnishing consists of an iron cot, an oak table and chair, and a small rug, to each occupant. At the end of each ward farthest from the executive department is a diet kitchen upon one side, and upon the other the bath-rooms, water-closets, and sinks. The plumbing is of the latest improved pattern, and all pipes and traps are exposed to view so that no leakage or dirt may escape the attendant's eye. The ceilings are high, and ventilation is both natural and forced. The hospital is finished throughout in hard wood.

The clinic-room on the second floor of the executive department is a large amphitheatre seating about three hundred students, and is well lighted from above and from the sides.

The training-school, which is as yet in its infancy, is under the charge of Miss Charlotte M. Perkins, a graduate of the Pennsylvania Hospital training school, in Philadelphia. Miss Perkins has a corps of twelve nurses under her charge, and hopes within a few months to be enabled to supply the Nashville physicians with competent, trained nurses. The government of the Hospital is in the hands of three Nashville gentlemen who compose the Board of Public Works.

The writer desires to make acknowledgment of his indebtedness for the courtesy shown him during his brief visit to the Hospital to Miss Perkins, Dr. Brower, the Superintendent, and to the resident physicians.

NEWS ITEMS.

The University of the South.—The University of the South, Seewanee, Tennessee, an institution of learning under the patronage of the Episcopal church, will establish, in October, at Chattanooga a grammar department, and also a department of medicine and of law.

The outline of the medical department indicates a medical school of the highest character, strict preliminary examinations by the college faculty being held prior to admission, and three full winter courses of lectures being necessarily attended before graduation.

The faculty, as so far announced, consists of the following gentlemen:

Dr. Key, surgery; Dr. Trippe, gynecology; Dr. Holtzclaw, anatomy; Dr. Eaton, practice of medicine; Dr. Reeves, pathology, microscopy, and clinical medicine; Dr. Wilson, therapeutics; Dr. Gahagan, physiology, and Dr. Sims, sanitary science.

Changes in the Faculty of the Medico-Chirurgical College.—Dr. J. M. Anders has been transferred from the Professorship of Children's Diseases to the Chair of Clinical Medicine. Dr. Ernest Laplace has been made Professor of Pathology and of Clinical Surgery, and Dr. Samuel Wolfe has been elected Professor of Physiology.

New Appointments.—Dr. Robert W. Taylor has been appointed to the Professorship of Venereal Diseases, formerly occupied by Dr. Fessenden N. Otis, in the College of Physicians and Surgeons of New York.

Dr. A. H. Buckmaster has been appointed Assistant Surgeon to the Woman's Hospital, of New York, to fill the vacancy caused by the resignation of Dr. Sherman Van Ness, and has removed from Brooklyn to No. 50 East Thirteenth Street, New York.

The Mary A. Dixon-Jones Case.—The recent action of the District Attorney of Brooklyn, in dismissing the second of the indictments found against Dr. Mary A. Dixon-Jones and her son more than a year ago, closes the criminal side of one of the most dastardly attempts to ruin a professional reputation ever made in this country.

It is unnecessary to enter into the details of this malicious charge, which is, unfortunately, still fresh in the minds of many. Every physician in America will most heartily congratulate Dr. Jones upon the final closure of the case.

The Census of Hallucinations.—Professor William James, of Harvard, is compiling the "Census of Hallucinations" in this country. The Census was begun several years ago by the Society for Psychical Research, but is now under the auspices of the International Congress of Experimental Psychology, which met in Paris last summer.

The object of the inquiry is twofold: first, to get a mass of facts about hallucinations which may serve as a basis for scientific study of these phenomena; and, second, to ascertain approximately the proportion of persons who have had such experiences. Until the average frequency of hallucinations in the community is known, it can never be decided whether the so-called "veridical" hallucinations (visions or other "warnings" of the death, etc., of people at a distance) which are so frequently reported, are accidental coincidences or something more.

Some 8000 or more persons in England, France, and the United States have already returned answers to the question which heads the Census sheets, and which runs as follows:

"Have you ever, when completely awake, had a vivid impression of seeing or being touched by a living being or inanimate object, or of hearing a voice; which impression, so far as you could discover, was not due to any external physical cause?"

The "Congress" hopes that at its next meeting, in England in 1892, as many as 50,000 answers will have been collected. It is obvious, that for the purely statistical inquiry, the answer "No" is as important as the answer "Yes."

Dr. James has been appointed to superintend the Census in America, and requests the coöperation of all who may be interested in the subject. Each Census

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blank contains instructions to the collector and spaces for twenty-five names; and special blanks for the "Yes" cases are furnished in addition. Dr. James will supply these blanks to anyone who makes application. Requests should be directed to Professor William James, Harvard University, Cambridge, Mass.

Legacies to the Hospitals of Philadelphia.—By the generous will of the late George S. Pepper nearly every charitable institution in Philadelphia is enriched. The following are the more important legacies:

To the University of Pennsylvania, $60,000, for the endowment of a professorship, to be selected by William Pepper, M.D.

To the Hospital of the University of Pennsylvania, $50,000.

To the Presbyterian Hospital, $50,500.

To the Hospital of the Protestant Episcopal Church, $50,000.

To the Orthopædic Hospital, $25,000.

To the Pennsylvania Hospital, $50,000.

To the Hospital of the Jefferson Medical University, $50,000.

To the Charity Hospital, $25,000.

To the St. Joseph's Hospital, $25,000.

To the Children's Hospital, $25,000.

To the Wills Hospital, $10,000.

To the St. Christopher's Hospital for Children, $25,000.

To the Hospital and Dispensary of St. Clement's Church, $10,000.

To the Children's Hospital, Country Branch, $10,000.

To the Maternity Hospital, $25,000.

To the Northern Dispensary, Southern Dispensary, Philadelphia Dispensary, Howard Dispensary, each $5000.

A Sanitary Organization of Women.—The women of Brooklyn have united to form a Ladies' Health Protective Association, similar to one which has for years been so useful in New York City. The lines of its work will be in the direction of such nuisances as offensive pursuits, uncared-for tenement houses, and filthy streets. The wives of physicians form a considerable proportion of the organization.

The Electrical Execution Law.—The law in New York State substituting electricity for hanging as the means of execution, has at last been passed upon by the Court of Appeals, and considered to be constitutional, after a struggle lasting nearly a year. The court virtually declares that killing by electricity is more humane than that by hanging, and this declaration is based upon strong and repeated testimony that the application of electricity in the manner contemplated by the statute must result in instantaneous and, therefore, painless, death.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 20 TO MAY 26, 1890.

HEIZMANN, CHARLES L., *Major and Surgeon.*—Is granted leave of absence for one month.—Par. 1, *S. O. 39, Department of Texas*, May 19, 1890.

By direction of the Secretary of War, a Board of Medical Officers, to consist of: ANTHONY HEGER, *Lieutenant-Colonel and Surgeon;* JOHN BROOKE, *Major and Surgeon;* and ROBERT H. WHITE, *Major and Surgeon,* will assemble at the U. S. Military Academy, West Point, New York, on June 7, 1890, to examine into the physical qualifications of the candidates for admission to the Academy, and, in connection with the Superintendent of the Academy and Commandant of Cadets, the members of the graduating class. Reports of the proceedings of the Board will be forwarded through the Superintendent of the Academy to the Adjutant-General of the Army. Special reports will be made in the cases of any graduates deemed to be physically unfit for the military service, and also in the cases of candidates who may be admitted on probation or rejected.—Par. 3, *S. O. 121, A. G. O., Washington, D. C.*, May 23, 1890.

GIRARD, J. B., *Major and Surgeon.*—Is granted leave of absence for one month, to take effect as soon after June 1st proximo as a medical officer can be sent to Fort Lowell for temporary duty.—Par. 1, *S. O. 48, Headquarters Department of Arizona*, May 17, 1890.

DEWITT, THEODORE F., *First Lieutenant and Assistant Surgeon.*—Is relieved from duty at Willet's Point, New York, and will report in person to the commanding officer Fort Ringgold, Texas, for duty at that station, relieving W. Fitzhugh Carter, Captain and Assistant Surgeon. Captain Carter, upon being thus relieved, will proceed to West Point, New York, and report in person to the Superintendent U. S. Military Academy, for duty at that station.—Par. 2, *S. O. 119, A. G. O.*, May 21, 1890.

BENHAM, ROBERT B., *Captain and Assistant Surgeon.*—Is relieved from duty at Madison Barracks, New York, and will report in person to the commanding officer Fort Wadsworth, New New York, for duty at that station, relieving Charles K. Winne, Captain and Assistant Surgeon. Captain Winne, upon being thus relieved, will proceed to Fort Snelling, Minnesota, and report in person to the commanding officer thereof, for duty at that post.—Par. 2, *S. O. 119, A. G. O.*, May 21, 1890.

By direction of the Secretary of War, the following-named officers of the Medical Department will proceed to Berlin, Germany, as Delegates to the International Medical Congress which is to meet in that city in August next: CHARLES H. ALDEN, *Lieutenant-Colonel and Surgeon,* and JOHN S. BILLINGS, *Major and Surgeon.* After the adjournment of the Congress, the officers named will return to the United States, and rejoin their proper stations.—Par. 11, *S. O. 116, Headquarters of the Army, A. G. O., Washington, D. C.*, May 17, 1890.

By direction of the Secretary of War, JOHN S. BILLINGS, *Major and Surgeon,* will, while abroad under his orders to attend the International Medical Congress at Berlin, Germany, and before returning to the United States, visit, on official business, such points in Great Britain, France, Italy, Germany, Belgium, Holland, and elsewhere, as may be deemed necessary by the Surgeon-General of the Army, and under such special instructions as he may receive from the Surgeon-General.—Par. 12, *S. O. 116, Headquarters of the Army, A. G. O., Washington, D. C.*, May 17, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING MAY 24, 1890.

CRANDELL, RAND P., *Assistant Surgeon.*—Ordered to the Naval Hospital, New York.

BERRYHILL, THOMAS A., *Passed Assistant Surgeon.*—Detached from Hospital, New York, and ordered to Hospital, Mare Island, California.

ANDERSON, FRANK, *Passed Assistant Surgeon.*—Ordered to special duty in Bureau of Medicine and Surgery.

VAN REYPEN, W. K., *Medical Inspector.*—Ordered to New York on special temporary duty.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVI. SATURDAY, JUNE 7, 1890. No. 23.

ORIGINAL ARTICLES.

THE OCULAR COMPLICATIONS OF MALARIA.[1]

BY G. E. DE SCHWEINITZ, M.D.,

OPHTHALMIC SURGEON TO THE PHILADELPHIA AND CHILDREN'S HOSPITALS, OPHTHALMOLOGIST TO THE ORTHOPÆDIC HOSPITAL AND INFIRMARY FOR NERVOUS DISEASES.

FÖRSTER,[2] writing in 1877 concerning the ocular changes in malaria, says:

"If we take into consideration that protracted pernicious malaria may originate the severest disturbances in the entire organism—melanæmia, decided cerebral symptoms, probably dependent upon circulatory disturbance in the central organ of the nervous system, profuse diarrhœa and intestinal hæmorrhage, albuminuria and hæmaturia, irremediable cachexia, hæmorrhagic diathesis, fatty degeneration of the glandular organs of the abdomen, etc.,—then, in some measure, it is remarkable that little is reported concerning the disturbances of the eye, the result of malarial poisoning."

It is the object of the present paper to record the various diseases of the eyes which have been studied either as the direct result of the malarial poison, or which have appeared in association with malarial toxæmia.

Diseases of the Conjunctiva. Intermittent Ophthalmia.—W. F. Norris[3] writes:

"Intermittent ophthalmia is but rarely encountered in countries where only a mild form of intermittent fever is present; in fact, it was so rare in Scotland, that Mackenzie, in the earlier editions of his work, denied its existence, but a larger experience enabled him (in 1854) to give three cases. In 1828 and 1829 it was so infrequent in Marburg that Hueter (*Jahrbücher für Chirurgie u. Augenheilkunde*, Berlin, 1828, xii. 271–279) devoted two papers to its study—one of a case of the quotidian type, and the second, of the septan form of the ophthalmia."

Between the years 1838 and 1868 the files of the *Annales d' Oculistique* contain references to ten papers upon this subject. In 1843 J. E. F. Schaepman wrote his thesis[4] upon intermittent ophthalmia, and described three varieties: 1. Those which appear under the mask of intermittent fever; 2. Those which are only one symptom of intermittent fever; and 3. Those which result from the change in the form of an intermittent fever.

In countries where malaria is prevalent intermittent ophthalmia is common, and may appear simply as a vascular irritability of the eye, without true inflammation (phlegmasia dolens oculi or ophthalmia nervosa of the older writers); in association with ordinary trigeminal neuralgia, which—as is the case with all neuralgias—may assume a periodic type; as a congestion of the conjunctival vessels, with photophobia and lachrymation, together with malarial neuralgia—incurable until the true nature of the disorder is discovered; or, as Griesenger[1] has said, it may terminate in stationary chronic conjunctivitis, opacity of the cornea, and even atrophy of the bulb.

Wehle[2] describes among intermittent cases in Hungary a form of ophthalmia characterized by erysipelatous swelling of the lids, studding of conjunctiva with red dots, tumefaction of the ocular conjunctiva, and occasional involvement of the cornea and destruction of vision.

Eulenberg and Landois,[3] in a discussion on vasomotor neurosis, refer to intermittent ophthalmia, giving the important literature from Edmonstone's treatise in 1816 to Derby's article in 1865, as a circumscribed affection of the trigeminal filaments supplying the conjunctival vessels arising under the influence of malaria—a vasomotor infection-neurosis.

In the cases reported by Pagenstecher conjunctivitis, sometimes accompanied with paresis of accommodation, was the only symptom of malaria, and formerly was called "febris intermittens larvata."

Finally, an ophthalmia may arise to which, when it is already advanced, intermittent fever may be added. To the latter class, perhaps, should be referred those epidemics of ophthalmia between which and malaria an affinity has been traced. An example of this character is furnished by the study of the epidemic ophthalmia which pervaded South Carolina in the summer and fall of 1882, and which E. Miller ascribed to the influence[4] of malaria—a position in which he was supported by Rhett, Kollock, of Cheraw, and Munroe, of Marion; but unsupported by Howe, of Columbia; Cowles, of Johnson's, and F. L. Parker, of Charleston.

Diseases of the Cornea. Malarial Keratitis.—The cornea may be involved in a form of inflammation specially dependent upon the malarial poisoning, or

[1] Read by title in the Section of Medicine, of the American Medical Association, Nashville, 1890.

[2] Graefe u. Saemisch, Handbuch der gesammten Augenheilkunde. Bd. vii. p. 176.

[3] Pepper's Encyclopædia of Medicine, vol. iv.

[4] For a review see Annales d'Oculistique, t. x. p. 46.

[1] Infectionskrankheiten, 2 Auft., 1864, p. 48.

[2] Oesterreichische medizinische Wochenschrift, 1846, No. 16, quoted in Annales d'Oculistique, t. xviii. p. 174.

[3] Wiener medizinische Wochenschrift, No. 72, p. 1140, 1867.

[4] Louisville Medical News, vol. xv.–xvi. p. 177.

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become inflamed in a subject of intermittent fever as an associated disease. Thus, long ago, Bürhrlen[1] while discussing intermittent ophthalmia pointed out that keratitis may occur in a malarial individual during the course of the disease, and should be described as "intermittens cum keratite." A vascular keratitis is recorded as an illustration. This influence of the malarial impression upon the course of a keratitis, either because the patient resides in paludal regions or himself is the subject of malaria, is a matter of common observation and stock knowledge, and to such an influence should be accredited the cases of herpes febrilis corneæ observed by Godo,[2] one-third of which he traced to malaria. Chronic interstitial keratitis, either directly malarial or occurring in malarial subjects, has been observed in a number of instances. Arlt[3] has recorded eight cases; Levrier[4] another; more recently the influence of this cachexia in the production of this type of corneal disease has been dwelt upon by Landolt, Poncet, Javal, and others, while Sedan, of Toulon,[5] among thirty-four cases found malaria in twenty-seven instances.

Keratitis the direct result of malaria, and existing in the form of a superficial lesion, has been known for a long period. Becker[6] referring to a variety of keratitis after cataract extraction, describes its appearance as identical with that of the painful keratitis following malaria, mentioned by the older writers, but not mentioned in the more modern literature. In this country we are indebted especially to Kipp, of Newark, for a masterly study of malarial keratitis. His first publication appeared in 1880,[7] and in the *Transactions* of the American Ophthalmological Society for 1889 he gives his most recent results based upon one hundred and twenty observations. In 90 per cent. of the cases the lesion consisted in a "peculiar narrow, serpiginous, superficial ulcer, with lateral offshoots," like the skeleton of veins in a lanceolate leaf, usually accompanied with photophobia and lachrymation, and sometimes ushered in with severe supraorbital neuralgia. This appearance Dr. Kipp formerly considered characteristic, but in five instances it was replaced by a large superficial abrasion of the cornea, while the peculiar appearance just described he has observed in non-malarial subjects. Cases appeared in every month of the year—69 per cent. during June, July, August, September, and October. Dr. Kipp's observations have been repeated and confirmed by Hotz,[1] H. G. Miller,[2] and Sutphen.[3] Noyes, whose cases were reported by Minor,[4] for years has been accustomed to observe a form of superficial keratitis as the result of malaria; the characteristic symptoms were exaggerated tenderness of the supraorbital nerve and anæsthesia of the cornea. Van Milligen,[5] in 1888, described a peculiar form of keratitis, resembling the keratitis dendritica mycotica of Grut, Hock,[6] and Emmert, as the result of malaria, and characterized by the appearance of a superficial erosion on the temporal border of the cornea or a fungus-like lesion in some other point; local pain, ciliary neuralgia, and anæsthesia of the cornea were associated symptoms. Keratitis bullosa, a disease in which large vesicles form, filled with clear serum and of uncertain origin, in some instances has appeared to have its source in malaria, and Tangeman, of Cincinnati, suspecting this, cured his cases by the administration of quinine.

The practical deduction from these observations evidently is the importance of remembering the possible influence of malaria in corneal inflammation, and in the absence of the characteristic clinical symptoms described by Kipp, Noyes, and Van Milligen, the need of examination of the blood for the corpuscles of Laveran. The remedies indicated in addition to local measures are quinine, arsenic, and eucalyptus.

Diseases of the Iris. Iritis.—The development of iritis under the influence of syphilis, rheumatism, gout, gonorrhœa, and in association with tuberculosis and diabetes, would seem to indicate malarial toxæmia as a possible and even likely cause for the same inflammation. Staub[7] described intermittent iritis, passing on in some instances to intermitting and periodic hypopyon, cured by the influence of quinine. Peunoff,[8] in an investigation of a large variety of ocular troubles the result of malaria, in rare instances found iritis. Mackenzie[9] and Quaglino[10] refer to periodic iritis; and modern writers, like Noyes, include malaria among its constitutional causes. It is to be remembered, however, as Gowers[11] has pointed out, that pyæmia closely

[1] Medicinische Correspondenzblatt des Würtemb.Ae rzt. Vereins, Bd. xxx. No. 35, p. 293.
[2] Recueil d' Ophtalmologie, March, April, and May, 1880.
[3] Klinische Darstellung der Krankheiten des Auges, 1881.
[4] Thesis, Paris, 1879.
[5] Recueil d' Ophtalmologie, September, 1887.
[6] Graefe u. Saemisch, Handbuch, vol. v. p. 350.
[7] Transactions American Ophthalmological Society, 1880.

[1] Chicago Medical Journal and Examiner, vol. xliii. p. 598, 1881.
[2] Transactions Rhode Island Medical Society, 1882, p. 381.
[3] Transactions American Ophthalmological Society, 1889, p. 338.
[4] American Journal of the Medical Sciences, 1881.
[5] Centralblatt f. praktische Augenheilkunde, January, 1888.
[6] For a discussion of these types of keratitis and their etiology see an article entitled "Beitrag zur Kentniss der furchen Keratitis," by Dr. F. Makrocki, Klin. Monatsbl. f. Augenheilkunde, March, 1890, p. 39.
[7] Von Ammon's Zeitschr. f. Ophthalmologie, Heidelberg und Leipzig, 1835; quoted by Wiener medizinische Wochenschrift, No. 72, p. 1140, 1867.
[8] Centralblatt f. praktische Augenheilkunde, 1879.
[9] Diseases of the Eye.
[10] Annales d' Oculistique, t. 65, p. 129.
[11] Medical Ophthalmoscopy, 2d ed. p. 248.

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simulates intermittent fever, and purulent affections of the eyes (purulent iritis and choroiditis) may arise under its influence and be ascribed inaccurately to malaria.

Scleritis and episcleritis—relapsing affections—no doubt appear in malarial subjects as associated disorders. Some of the reported examples of intermittent ophthalmia appear to have been of their character.

Amblyopia and Amaurosis.—Disturbances of vision during the course of intermittent fever have been observed from the earliest days, many of the recorded cases having been reported in the pre-ophthalmoscopic period. Leber[1] divides the amauroses of malaria into two varieties: typical or intermittent, and stationary amaurosis. In temporary amaurosis the fever usually is of the tertian type, and may be associated with severe nervous symptoms—delirium, coma, aphasia—or the loss of vision begins with the chill, lasts through the fever and subsides with the sweat, as was shown years ago by Kühlbrand and Tott.[2] Thus Deval[3] mentions a case of tertian intermittent with amblyopia after disappearance of the fever which only slowly and partially subsided, and Dutzmann,[4] a young man with tertian intermittent, violent convulsions, unconsciousness and complete amblyopia without fundus lesions, who was cured with quinine. In larvate intermittents, when the fever is slight or concealed, the amaurosis, according to Himley (quoted by Leber), more usually is monolateral—a point observed by von Störck as long ago as 1759.

Stationary amaurosis from larvate intermittents is more unusual, and may be an amblyopia with exacerbations, either unilateral or bilateral in character. (Leber.) Periodical amblyopia may be associated with spasm of the retinal vessels, as in the cases recorded by Ramorius,[5] pale disks, shrunken veins and arteries, and simultaneous congestion of the face and ears.

The result of numerous observations is that amblyopia not infrequently complicates malaria and appears in the form of a transient loss of vision, or as complete blindness. Its duration varies from a few moments to several hours, days, or even months, and it disappears under antiperiodic treatment, as Teillais[6] has said, "with the same quickness with which it came without leaving a single trace of its passage at the bottom of the eye." In most of the amblyopias just referred to, the ophthalmoscopic findings were negative, or the descriptions are included in the vague terms applied to the retina or optic nerve —"congestion," "hyperæmia," "redder than normal." In the monolateral cases these terms have been at times limited to the affected side, while the other was described as "normal."

Two questions of differential diagnosis are of importance in the consideration of malarial amblyopia —amaurosis from associated kidney disease, and blindness the result of large doses of quinine; examination of the urine should exclude the one, and the peculiarities of the retinal arteries and the behavior of the color-fields the other. Adopting a classification given by Teillais[1] we may say in regard to malarial amblyopia that it is of three varieties:

1. Amblyopia without lesion due to a special action of the malarial poison on the optic nerve and the retina.

2. Amblyopia in which the lesions are not appreciable with the ordinary means of investigation.

3. Amblyopia with lesions apparent at the bottom of the eye-ground.

It is to the lesions of the latter group to which I now wish to call attention. These consist in œdema of the end of the optic nerve and optic neuritis, optic atrophy, retino-choroiditis, hæmorrhages into the retina and into the vitreous humor.

Malarial Neuritis and Neuro-retinitis.—In 1866 McNamara referred to instances of intermittent hemicrania with neuritis in connection with malaria, and several years later reported[2] a case of neuro-retinitis, the result of malarial toxæmia in a native Indian, cured by quinine. These cases he believed to be common in that region. Noël Gueneau de Mussy[3] relates a case of double optic neuritis and hæmorrhages into the retina alleviated by quinine. Galezowski[4] refers to neuritis; Poncet,[5] who observed changes in 10 per cent. of the cases of malarial cachexia in Algeria, beside hemorrhages found peri-papillary œdema and neuro-retinitis. Jacobi[6] describes œdema of the papilla in a woman of thirty-four years of age, with quotidian ague and enlarged spleen, who was cured by quinine and iron, and in Peunoff's[7] extensive list of ocular disorders attributed to malaria, several cases of neuro-retinitis are detailed. Hammond[8] saw two cases of malaria with optic neuritis and remarkable collections of stellate pigment in the retina. In a recent communication McNamara[9] reports three cases of neuritis due to malarial poisoning.

[1] Graefe u. Sæmisch, Handbuch, vol. v. p. 950.
[2] Casper's Wochenschrift f. des gesammten Heilkunde, 1833, II. Nr. 35, and Ibid., 1835, quoted by Leber.
[3] Traité de l'Amaurose, Paris, 1851, quoted by Bull in St. Louis Courier of Medicine, vol. 3, 1880, p. 453.
[4] Weiner medizinische Presse, 1870.
[5] Annales d' Oculistique, vol. lxxxii. p. 200.
[6] Annales d' Oculistique, xcv., xcvi. 1886, p. 234.

[1] Loc. cit.
[2] Indian Medical Gazette, 5 and 6, 1870–71, p. 28.
[3] Journal d' Ophtalmologie, 1872.
[4] Traité Iconographie, p. 190.
[5] Annales d' Oculistique, May, 1878.
[6] Von Graefe's Archiv f. Ophthalmologie, Bd. xiv. 1. 154.
[7] Loc. cit.
[8] Transactions American Neurological Society, 1875, p. 142.
[9] British Medical Journal, May 8, 1890.

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Hæmorrhages into the retina may occur with neuritis or without other changes. Numerous reports have appeared, prominent among which are those by Peunoff,[1] Fernandez (quoted by Poncet), Poncet,[2] Karpinsky,[3] whose cases happened in southern Russia, in some instances associated with marked fever; and Stephen Mackenzie,[4] who found in three examples the hæmorrhages especially along the course of the large vessels, and when they faded away shiny white spots marked their position. In our own country a number of communications upon this topic have been published. Thus Edward W. Jones,[5] of New Orleans, reports five cases of retinal hæmorrhage. In one, a man aged thirty-four, the fever was of the remittent type, and in another there was also unilateral optic neuritis. J. Dickson Bruns,[6] of New Orleans, describes two examples of hæmorrhages into the retina—the one with fever of the tertian type, and the other in which the chills occurred at first daily, and later every other day. Usually the hæmorrhages are found near the disk, along the course of the larger vessels, as in Mackenzie's cases, sometimes on the disks in the form of fine specks of blood, and occasionally in the macular region assuming unusual shapes; Bruns examined one formed like a "meat-chopper." Amenitsky[7] reports blindness attributed to embolism of the central artery of the retina in a girl of seventeen, the subject of tertiary intermittent fever; the diagnosis is open to doubt.

Optic Atrophy. — Galezowski[8] describes optic atrophy with the pernicious forms of malaria; it is rare in the intermittents of temperate climates. Instructive cases have been recorded by McNamara, and in our country by Bull.[9] (The influence of quinine was excluded.) Edward Jones[10] among twelve cases of retinal disease, the results of malaria, saw only one go on to atrophy. Even when the atrophy is advanced marked improvement under treatment (strychnine and potassium iodide) may take place, as in a remarkable case of recovery of vision after atrophy of the optic nerves consecutive to malaria, reported by Brudenell Carter.[11]

The *pathology of the retinal and optic nerve changes* in these cases is not settled. The hæmorrhages have been ascribed to pigmentary embolism, although, as Gowers points out, this may be present, according to Mackenzie, in the absence of melanæmia. Poncet[12] believes the vessels of the choroid may be the seat of emboli of leucocytes, and attributes the hæmorrhages to this condition. According to Lopez y Veitia,[1] the immediate cause of the extravasations of blood is an augmentation of the blood tension, and he believes the hæmorrhages are increased by fresh accessions of fever. H. D. Brunt[2] thinks the smaller hæmorrhages due to diapedesis, the larger ones to rupture of the finer bloodvessels of the retina. Concerning retinal hæmorrhage and its frequency Brunt[3] writes that during the years 1882–1886, 192 cases of malarial fever were treated in the wards of the Charity Hospital in New Orleans, but during the same time only six indubitable cases of malarial hæmorrhage are recorded in the books of the Eye-clinic.

Jacobi[4] believes a neuritis, not itself intermittent in character, bears no direct relation to malaria. According to him, this depends upon severe recurring hyperæmias of the opticus and retina, separated by such short intervals that the dilated bloodvessels cause œdema and incarceration of the intraocular end of the optic nerve within the scleral ring (according to von Graefe).

McNamara[5] "inclines to the idea that the inflamed state of the optic papilla is due to something of the nature of a microbe which becomes planted in the affected tissue, and growing there produces ptomaines, which in their turn cause irritation of the tissues, engorgement of the vessels, and the transudation of serum and leucocytes into the retina and optic papilla."

In some instances optic neuritis is secondary to meningitis. Galezowski ascribed the atrophy to pigmentary embolism; in the majority of cases it is consecutive to a neuritis.

It is of prime importance to exclude chronic kidney and hepatic disease before attributing these retinal and optic nerve lesions to miasmatic poison, and in the atrophies the influence of quinine must be eliminated. Bull[6] has examined 150 cases of malaria, and omitting the instances in which co-existing hepatic and renal disease existed, believes the examples of "degeneration or inflammation of the optic nerve due directly to miasmatic influence" to be infrequent, a position in which he is supported by Kipp.[7] McNamara, on the contrary, writing of England, thinks the instances more common where malaria prevails than is generally supposed. The writer has examined numerous malarial subjects in Pennsylvania and found only rarely coarse retinal changes.

Lesions in the Vitreous and Choroid.—The lesion of the vitreous which most usually has been recorded

[1] Loc. cit. [2] Loc. cit.
[3] Aertz. Blatter, No. 373, 1879; Centralblatt f. praktische Augenheilkunde, 1880, p. 84.
[4] Medical Times and Gazette, 1877.
[5] Medical Record, June 27, 1885.
[6] New Orleans Medical and Surgical Journal, vol. x. p. 455.
[7] Nagel's Jahresbericht, 1886, p. 252. [8] Loc. cit.
[9] American Journal of the Medical Sciences, 1877, p. 413.
[10] Loc. cit.
[11] British Medical Journal, January 3, 1886.
[12] Annales d' Oculistique, 95–96, 1886.

[1] Thèse de la Havane, Recueil d' Ophtal., 12, 1888.
[2] New York Medical Record, July 14, 1888.
[3] Loc. cit. [4] Loc. cit.
[5] Loc. cit., British Medical Journal.
[6] St. Louis Courier of Medicine, vol. iii., 1880, p. 543.
[7] Transactions Medical Society of New Jersey, 1881.

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is hæmorrhage. In one case related by von Kries[1] this occurred in a patient who suffered from ague on the first day after the paroxysm had been arrested by quinine. Levrier[2] quotes Galezowski as relating an example of periorbital neuralgia with atrophic choroiditis and flocculi in the vitreous, and Peunoff reports choroiditis and vitreous opacities. In this country hæmorrhage into the vitreous has been noted by E. W. Jones,[3] and W. W. Seely[4] records two examples of serous effusion into the vitreous due probably to malaria. In the first case the vitreous was filled with an "impenetrable mist" which gradually cleared in two months. The patient had one severe chill, and the urine was normal. In the second case there was only a gray reflex from the fundus; supra-orbital neuralgia was associated. Brunt[5] has seen one similar case. The most important communication on vitreous hæmorrhage in cases assumed to be malarial, is from the pen of C. S. Bull.[6] Seventeen cases are reported in which the hæmorrhages occurred almost always in one, though they also occurred in both eyes, but never simultaneously. All of the patients were over forty years of age, and all the subjects of pronounced malaria contracted in markedly miasmatic regions. Valvular disease of the heart, chronic renal change, rheumatism and gout were excluded. In the majority of the cases the blood was extravasated generally through the vitreous; in a few it was in the posterior part. The hæmorrhages appear to have been due to rupture of choroidal or ciliary vessels, and possibly the vessels of the sheath of the optic nerve during the congestive stage of the malarial attack. After absorption of the blood, which was slow and left behind membranous opacities, areas of atrophic choroiditis were seen in the periphery of the eye-ground.

Changes in the Field of Vision.—Malarial amblyopia is always accompanied with more or less restriction of the visual field. A central scotoma may exist, small at first, or large enough to invade the whole field and produce the blindness (Teillais), or contraction of field and amblyopia with each paroxysm. In case of atrophy there is marked contraction, color scotoma (Bull), and color blindness (Peunoff). A remarkable phenomenon is hemianopsia. Peunoff[7] describes lateral hemianopsia with the approach of fever. Reich[8] himself had right lateral hemianopsia while suffering from the fever, and I refer by permission to a case under the care of Dr. Joseph Leidy, Jr., in the wards of the Pennsylvania Hospital in which there was bi-temporal hemianopsia. The corpuscles of Laveran led to a correct diagnosis, and the condition was cured by quinine.

The Pupils and Accommodation.—In some of Pagenstecher's cases of intermittent ophthalmia, paresis of accommodation was an associated symptom, and according to Bull the intermittent forms of visual disturbance probably are due to paralysis of accommodation. Mannhardt[1] reports three examples of paralysis of accommodation in subjects of stubborn quotidian and tertian intermittent (quinine produced a cure), and Stellwag[2] on the authority of this author places malaria among the causes of this derangement of the functions of the ciliary muscle. Stilling[3] reports larvate intermittent fever under the form of supra-orbital and ciliary neuralgia which reflexly brought forth spasm of accommodation.

Various authors have described the pupils as dilated and inactive, or unaffected; the latter when there has been complete blindness, a condition which is analogous to that which is seen in uræmic amaurosis.

Finally, as a functional disturbance, night blindness has been reported by C. Zimmerman[4] and by Poncet, who says it may be associated with peripapillary œdema.

Paralysis of the external eye muscles has been recorded in a few instances, but must be a rare manifestation. It is not mentioned in Mauthner's *Diagnostik und Therapie der Augenmuskellähmungen*, Wiesbaden, 1889.

Illustrative Cases.—During the last year the writer has examined a large number of cases of acute intermittent fever and chronic malaria without discovering, except in a few instances, serious ocular changes. Practically all of these cases had contracted their intermittents in the climate around Philadelphia—in other words, in regions not noted for types of pernicious fever. In the Eye Dispensary of the University Hospital, and in the wards of the Philadelphia Hospital, a number of cases of keratitis have appeared in malarial subjects, but they did not present the characteristic lesions noted by Kipp, Noyes and Van Milligen. In short, they should be described as "intermittents with keratitis," and not as examples of true malarial keratitis. In two cases there were multiple retinal hæmorrhages, and in one superficial optic neuritis with a single hæmorrhage.

CASE I. *Retinal hæmorrhages.*—A man, aged thirty-five, a laborer, working on an embankment and subject to much night exposure, was admitted

[1] Archiv f. Ophthalmologie, vol. xxiv., I., p. 159.
[2] Loc. cit. [3] Loc. cit.
[4] Transactions American Ophthalmological Society, 1882, p. 345. Ibid. 1885, p. 64.
[5] Loc. cit.
[6] New York Medical Record, vol. xxx. p. 617.
[7] Nagel's Jahresbericht, 1883, p. 301.
[8] Centralblatt f. praktische Augenheilkunde, 1879.

[1] Klinische Monatsblatt f. Augenheilkunde, 1865.
[2] Diseases of the Eye, 4th edition, p. 748.
[3] Klinische Monatsblatt f. Augenheilkunde, xiii. p. 530.
[4] Archiv f. Augenheilkunde, Bd. xiv., H. 1.

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to the hospital, and without any thorough examination classed as "general debility." An ophthalmoscopic examination revealed in each eye large oval hæmorrhages at the outer side of each disk. The spleen was enlarged. Under anti-malarial treatment the case improved, but disappeared from observation before a cure was obtained. The urine and heart were normal.[1]

This case was in all probability an example of true malarial hæmorrhage occurring in a man who had contracted his disease in a miasmatic neighborhood, and in whom the disease had become chronic with associated anæmia.

CASE II. *Multiple retinal hæmorrhages, probably malarial in origin.*—This patient, a man, aged forty-eight, living in Maryland, was seen in consultation with Dr. J. Madison Taylor, in May, 1888. He had suffered from intermittent fever of the tertian type for ten years, and three times contracted remittent fever. The spleen was enlarged. Two blood-counts made in 1888, at short intervals, yielded 2,800,000 red blood-corpuscles to the cubic millimetre, and later 3,200,000, the hæmoglobin being respectively 28 per cent. and 30 per cent. Subsequent examinations showed improvement in corpuscular richness and corresponding rise in the percentage of hæmoglobin. The heart presented no organic disease; repeated examinations of the urine, the absence of any indications of chronic Bright's disease. In the right eye the cornea was conical; the disk gray, containing a sharp central cup, and on its surface a flame-shaped hemorrhage, while above and to the nasal side there were three round hæmorrhages. In the left eye the disk was also very gray, and up and out from its margin, and down and in likewise, there were two small, round hæmorrhages. The macula contained numerous fine yellowish dots, and several small dot-like hæmorrhages.

This case at first sight led to the suspicion of pernicious anæmia; the gradual improvement, however, under the influence of iron and arsenic disproved this theory, and the anæmia was attributed to the malaria. This patient died subsequently of pneumonia, although before his death there had been marked improvement in the general condition.

CASE III. *Superficial optic neuritis; one small retinal hæmorrhage; probable influence of malaria.*—This case, a child, aged twelve years, was brought for constant frontal headache and some habit-chorea of the orbicularis. He lives in a malarious district on the banks of a river, and every summer for three years has had chills and fever. His last chill occurred on January 1st of this year. Since this date there have been no chills but numerous attacks of headache. Each optic disk was swollen slightly above the level of the eye-ground (+ 1.5 D.). All edges of the disks were veiled, the nasal sides hidden. The central lymph sheaths were full, white lines extending some distance along the vessels. In the right eye on the nasal side of the disk along the course of the nasal artery there was an oval, partially absorbed hæmorrhage. The urine was normal, the heart normal, the spleen slightly enlarged, the hæmoglobin 75 per cent., the blood-corpuscles 4,262,500, or, in other words, for the amount of red blood-corpuscles enumerated there was a deficiency of 10 per cent. in hæmoglobin. Repeated examinations of the blood failed to demonstrate the corpuscles of Laveran. This is probably explained by the fact that the child had always been given large doses of quinine up to the date of his first visit, January 23d.

In this case the presence of hypermetropia lent some doubt in regard to the etiology of the headache. The correction of this refraction-error did not control the headaches, which, however, disappeared under the influence of ascending doses of arsenic. The same is also true of the neuritis, which at his last visit, in the latter part of April, was well-nigh dissipated. The neuritis and hæmorrhage probably were due, in spite of the absence of the corpuscles of Laveran, to malaria. The history is perfectly clear; all organs were normal, and anti-malarial treatment effected an improvement. It is, however, equally true that hypermetropia is capable of producing superficial neuritis and congestion of the end of the optic nerve, and, furthermore, as this was corrected, it may have aided in the subsidence of the neuritis, as it also may have been the cause of its appearance.

In conclusion malaria may originate:

1. An ophthalmia of the intermittent type, which sometimes replaces the ordinary manifestations of the disease.

2. A form of keratitis, properly described as "malarial keratitis," and quite distinct from those types of corneal inflammation which are simply associated with intermittent fever.

3. Various functional ocular disturbances, amblyopia, paresis of accommodation, changes in the field of vision, even hemianopsia and night blindness.

4. Gross changes in the interior of the eye, optic neuritis, optic atrophy, retinal hæmorrhages, and hæmorrhage into the vitreous.

In the event of the appearance of any of the disorders of the fourth class it is necessary before ascribing it to malaria to eliminate rheumatism, syphilis, chronic Bright's disease, and chronic hepatitis; and, in so far as atrophies are concerned, the influence of quinine. In any doubtful case, especially in larvate forms of intermittents, and, indeed, in all cases a careful examination of the blood should be made with the hope of determining the presence or absence of the corpuscles of Laveran. It remains to be shown what relation the character and number of these bodies bear to ocular diseases attributed to malaria.

[1] Transactions County Medical Society of Philadelphia, April, 1890.

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THE RECONSTRUCTION OF DEFORMED NOSES BY GRAFTING A PORTION OF THE FINGER.

BY JAMES P. PARKER, M.D.,
OF KANSAS CITY, MO.

As civilization advances the demand for an unblemished appearance increases, and the number of surgeons who advise their patients to bear the affliction of an ugly nose, deformed eyelid, ear, or lip, with becoming grace and humility grows smaller. The replacing of a lip, eyelid, or nose, or any part thereof was not attempted until after the enthusiastic Tagliacozzi reported his experiments of grafting the cock's spur into the comb and the end of the rat's tail into its back. We may say that it was after these observations of Tagliacozzi that surgeons began to restore lost parts and to relieve deformities by operation. It was not until the eighteenth century that operations for harelip and cleft palate were practised with good results. During the last decade wonderful advances and grand achievements have been recorded in this branch of surgery, but we cannot think the end has been nearly reached. Grafting for the restoration of lost tissues and relief of deformities is yet in its infancy. The only special treatise on the cosmetic surgery of the nose that has been published is the excellent little book by Dr. John B. Roberts, of Philadelphia, in which the operation I offer is not described, and I have been unable to find mention of such an operation in any work on surgery. Rhinoplastic surgery is seldom dwelt on in current medical literature. I therefore ask the attention of physicians to one of the methods to which I have resorted for the reconstruction and cure of the great deformity of the nose resulting from a destruction of the nasal bones and the bony septum by ulceration and necrosis, which causes a sinking-in of the entire upper portion of the nose.

After trying, without satisfactory results, the different operations commonly resorted to for relief of the deformity, I began to look for something better. Every surgeon who has attempted to relieve the condition has appreciated that the great difficulty is to preserve the prominence and symmetry of the nasal bridge, a thing almost impossible to do with muscular or cutaneous tissue alone. If the cartilage or nasal bones be entirely absent, they must be replaced by cartilaginous or bony tissue from the patient or from one of the lower animals, in order to preserve the prominence of the nose. It occurred to me that if I could get a ridge-pole, as it were, under the muscular and cutaneous tissue, I might succeed in holding up the bridge. The phalanges of the little finger of the patient's left hand seemed the most convenient for the purpose, less objectionable to the patient than the tissues of a lower animal, and sufficient to restore the lost or atrophied tissues. To determine the best method of making the attachment of the finger requires much care and thoughtful consideration in each case. The operator must be governed by the extent of the deformity, size and length of nose and finger, and the position in which the hand can best be confined. The following case will serve to illustrate the operation:

J. C. G., aged thirty-five years, a cattle dealer, applied to me, on December 6, 1889, to have the lachrymal ducts dilated, as he was suffering from dacryo-cystitis and, by extension of the inflammation, a severe conjunctivitis.

On examination I found that the nasal bones and the bony septum had been destroyed by ulceration and necrosis. The bridge was deeply sunken. The external tissues had atrophied, leaving a rounded elevation representing the original bony bridge, with the unchanged nasal tip thus thrown into great prominence. He stated that he contracted syphilis during his early manhood. After explaining to him the difficulty of keeping open the nasal ducts, with the nose in its sunken and deformed condition, I suggested an operation for relieving the deformity, and at the same time of preserving the patency of the tear-ducts. To this he readily consented, as his eye-trouble was very annoying.

On January 14, 1890, the patient's nasal passages were thoroughly cleansed by syringing with an alkaline solution, followed by a 1-to-1000 solution of corrosive sublimate. Ether was administered, and the posterior nares plugged. I made a linear incision commencing upon the bone at the root of the nose, in the median line, and carried it well down to the prominent tip, cutting through into the nostril, opening up and elevating the parts with the iron handle of a large scalpel. (It requires great force to elevate the dense tissues at the bridge, even after they are cut through.) I then removed the nail and matrix of the little finger of his left hand, and dissected off the integument from the end of the dorsal and palmar surfaces to the upper third of the second phalanx. Having found, by measuring the nasal wound, the exact length of the graft required, I shaped the finger to fit the wound. The epidermis was removed from that part of the finger resting upon the septum. The hæmorrhage having been controlled, the prepared finger was placed in the wound with the tip of the first phalanx resting upon the bone at the root of the nose, the outer side of the finger being placed anteriorly to give the organ as natural a contour as possible. The thumb of the same hand was placed under the chin, with the first, second, and third fingers resting on the left cheek. The finger-graft was secured in place by silver-wire sutures; the edges of the skin and integument of the nose and finger were brought together and accurately coaptated by means of silk sutures. The lower canaliculi being slit open, I passed a No. 6 Bowman's lachrymal probe into the nasal ducts, on the removal of which I inserted a silver style in each duct. By means of a catheter, I placed a rubber condom in each nostril, carrying it well back into the posterior nares. Each condom was then filled with warm water by means of a syringe, tied to retain the water, and the redundant

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rubber was cut off. These dilated bags conformed to all parts of the nostril, and acted as a water-bed to support the parts and to prevent hæmorrhage. The outer wound was dressed with corrosive sublimate gauze. The cheek was padded under the fingers with absorbent wool. The hand and arm were secured in position by means of a rubber bandage, and the patient put to bed. His temperature went up to 101° on the following day, but never higher. The rubber bags were renewed daily for five days, and the nostrils washed out with a solution of boric acid in camphor water. On the fifth day the bandage, dressing, rubber bags, and sutures were removed, primary union having been obtained. The finger was amputated at the second joint, leaving enough of the integument to cover the lower end of the bone. The edges of the skin of the new nose were brought together by silk sutures and dressed with flexible collodion, which remained six days, when it was moistened with alcohol and ether and removed, and the sutures were taken out, leaving the wound united throughout by first intention. The bridge then appeared too high, but some contraction followed, which reduced it to a satisfactory size. The septum and phalanx had formed a rigid union, and the skin of the finger that was placed in the nostrils became normal mucous membrane. The patient left me on April 4th, wearing eye-glasses instead of his old spectacles. He writes me that he "would cheerfully give up two fingers rather than have the old flat nose again."

While deformities about the face may not directly impair an individual's health, the burdens inflicted by the remarks of friends and the jeers of enemies may cause mental aberration and distress. Every effort consistent with safety should be made by the surgeon to relieve such deformities. Stricture of the lachrymal duct is frequent in individuals with flat or sunken noses; therefore, those of us who practise ophthalmic surgery see more of such deformities than the general surgeon, but the supply is sufficient for all.

SOME POINTS IN THE NATURAL HISTORY OF ENTERIC OR TYPHOID FEVER.[1]

BY JAMES E. REEVES, M.D.,
OF CHATTANOOGA, TENN.

FROM the remotest period down to the present time medical history gives no era when the world was entirely exempt from epidemic contagious fevers. Indeed, they have been universal; sometimes prevailing in a particular neighborhood and only attacking a few individuals; at other times spreading amongst vast multitudes and cutting down with a wide swath of death and desolation all ages and ranks of the population. With whatever scope of smiting visitation, whether epidemic and ravaging a continent or confined to a city, a hamlet, or rural hut, they have never been wholly extinct; but their specific germs have lurked a fatal spark among the embers of society, ready to burst forth into a consuming blaze at every favorable breeze.

An Unstable Nomenclature.—Much of the confusion which has existed concerning the natural history of some of the more prevalent specific pyrexial disease has, no doubt, been due to an unstable, and perhaps sometimes unmeaning nomenclature. This reflection, I think, is allowable in connection with the disease under consideration, for even since the beginning of the present century at least a dozen different names have been proposed and employed by systematic authorities.

Following the example of the late Professor George B. Wood, whose memory I shall always cherish, because of his goodness to a poor young man in the backwoods of Virginia, I have chosen the name employed in the title, and in recording my observations shall exclude all unnecessary reference to both the literary history and the etiology of the disease, thus restricting the measure of my self-imposed undertaking to a sincere endeavor to present a true or natural picture of enteric or typhoid fever as I have seen and studied it by the light of nearly forty years' experience—alike in sparsely settled country districts, in village, town, and city; and when influenced neither by crowd-poison, medical treatment, nor the impress of a particular idiosyncrasy.

The name *typhoid fever* was given by Louis in ignorance of a part of the ground, for he did not know, certainly, that another fever existed which ought to be called *typhus*, and in this uncertainty he named the disease *typhoid*, so as to convey, at any rate, the idea of analogy, if not identity, with what had previously been called typhus. In a letter addressed to me, in 1859, Professor Wood said:

"Now that the fact is recognized that these—typhus and typhoid—are two wholly distinct diseases, it seems to me quite unphilosophical to give to one of them a name from its supposed resemblance to the other. We say *varioloid* very properly because the affection so called is a modification of *variola*, and depends on the same cause; but the typhoid is not a modification of typhus, and depends on a different cause. It is true that in some cases, and in certain symptoms, it is like typhus; but scarcely more than it is, in other instances, like miasmatic remittent. It is certainly, I think, not more like typhus than roseola is like *scarlatina;* and yet we do not call the former *scarlatinoid*, or the latter *roseoloid*. Besides, the word typhoid has before been applied to a state occurring in numerous febrile diseases resembling typhus; as, a typhoid state of pneumonia, dysentery, bilious fever, etc., and its application to any one disease at present may lead to confusion, as, in fact, it has often led, in the mind of the learner. The name enteric fever is unobjectionable, and will, I think, ultimately triumph, because it merely indicates that the intestinal affection is characteristic, as in the case of smallpox, which we name from the eruption."

[1] Read before the Association of American Physicians, May 13, 1890.

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Not a New Disease.—Belief in the spontaneous origin of the disease has greatly retarded the discovery and general diffusion of correct knowledge on the subject; for, by parity of reasoning, such faith is without substantial support when the question is studied with the life-history of the human race. On the other hand, the doctrine of permanency of original types of contagious diseases has, probably, as remote antiquity for its origin, as stable a foundation for all future time, and as many unanswerable arguments in its support as the doctrine of the permanency of the different types of the human race—each type with its entirely different capacities, physical and mental, and known to have existed for at least five thousand years, and to have been the same at that long-ago period as at this moment; retaining its specific characteristics through every variety of circumstance, climate, and condition.

Now and then fortuitous circumstances may, indeed, have produced a hybrid; but such product could no more have given origin to a distinct and permanent species than a European can be changed into a Bushman, or naked black Hottentot savages into Bacons and Shakespeares.

And thus, no doubt, through a long line of successive ages has enteric fever descended without change of its original or essential characteristics, and will continue to afflict humanity in all situations where are congregated favorable atmospheric, terrene, civic, and domiciliary conditions for the growth and multiplication of its specific germ or contagium, so long as disease and death shall compass the earth.

Epidemic Visitation.—Epidemics do not prevail at all times; therefore, some special predisposing circumstance or influence must be present and lend its aid to produce widespread visitation. The contagion of measles, scarlet fever, diphtheria, whooping-cough, or of smallpox, like that of enteric or typhoid fever, is probably never wholly extinct in any country where these diseases have once prevailed; yet their epidemic prevalence only occurs in uncertain cycles or during particular seasons. To determine why epidemics rise and spread in some years so much more generally or widely than in others, is one of the most interesting points in medical physics; but, unfortunately, no satisfactory answer has yet been given to this question, and, while the phenomenon cannot be explained, we must be content in our ignorance to refer it to the influence of what was called by Sydenham and the older physicians, "the medical constitution of the air." Precisely the same uncertainty occurs with the crops; this year luxuriant growth and an abundant harvest; next year a general or partial failure; but the *seed*, under all modifying or controlling influences of growth and multiplication, remains the same in quality. In other words, the crop may vary as to the *quantity* or abundance of the harvest, but the specific *quality* is unchanged under all conditions.

Again, some soils are unsuited for the growth of certain grains. For example, Indian corn does not grow to perfection in Ireland, while wheat, rye, oats and barley in that country come to maturity and yield the husbandman a successful harvest. The same is true of certain localities concerning the prevalence of enteric or typhoid fever, also of diphtheria and scarlet fever, as I shall show on a subsequent page.

Definitive Elements.—Enteric or typhoid fever may be formulated thus: An acute contagious febrile affection derived from an antecedent case of the disease and depending for its communication from person to person upon the presence of a specific microörganism, which is believed to be of well-known morphological characteristics—a *bacillus*—and which can be cultivated outside of the human body. The disease prevails less frequently in tropical and sub-topical countries than in the temperate zone, is both endemic and epidemic in its visitations; attacks, preferably, young persons and those in middle life; is of long duration, but varying between ten and forty days *beyond* the *prodromic* period, which may cover from one to ten or even twelve days. There is profuse diarrhœa, or, at least, a relaxed state of the bowels, with "pea-soup," or "ochre-colored" stools; and at all stages a marked susceptibility to the action of laxative medicine; intestinal hæmorrhage in many cases, and in a few perforation of the bowels; epistaxis, either slight or profuse; tympanites, with gurgling produced by pressure over the ileo-cæcal valve; dulness of hearing, with mental hebetude, or morbid vigilance; headache, disappearing during the second week; delirium, either mild or violent, with *subsultus tendinum;* rose-colored lenticular eruption during the second week, coming out in crops and disappearing in the same order; fever-curve showing steady elevation of from one to two degrees in the evening with a fall of the same number of degrees in the morning for the first four or six days, and unlike the curve of any other acute febrile or inflammatory disorder; cough and bronchial râles; singular prostration of muscular strength; early heart-failure and a dicrotous pulse. The tongue soon becomes dry, and shows, in grave cases, a brown stripe in the middle, with *sordes* on the teeth and gums; in fatal cases, death occurs during the third or fourth week, with the constant and characteristic lesion of the small intestine involving Peyer's glands; and with enlargement of the spleen. Convalescence is tedious; true relapse is not infrequent, and the dis-

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ease affords as perfect immunity from subsequent attack as does scarlet fever or smallpox.

Partial History in Virginia.—Soon after my start in medical practice in Northwest Virginia—now West Virginia—in 1850, I encountered the most virulent and widespread visitation of enteric or typhoid fever it has been my fortune to witness, and I have read nothing in medical history of its epidemic prevalence and fatality, in this country, at least, which exceeded the ravages to which I allude. In thirteen adjoining counties the disease pursued its fearful march without respect to age, sex, or domiciliary condition. In fact, there was scarcely a locality in all that elevated or mountainous country which was not visited and scourged. The towns and villages did not suffer more severely than rural districts, and so varied was the gravity—in some cases, so mild or so slow and tedious; in others, so malignant and rapidly fatal—that the disease received different names to characterize its severity and fatality. In some localities it was given the name of a well-known family that had been swept off by it; in others, in which from the beginning the cases were malignant and quickly fatal, it was called the *Black Tongue.* There was such firm and general belief in its contagious character, that sufficient nurses for the sick could not always be secured, and from this cause, in many instances, the most dire results followed.

I remember some poor families who were thus afflicted and distressed, and when death came to their households they were compelled to put away with their own hands, for want of neighborly assistance, the bodies of their dead.

In other instances, because of the frightful mortality even when the cases were under the treatment of the most experienced physicians, faith in the power of medicines to do good in the disease was lost, and thus the *vis medicatrix naturæ* was left alone to battle with the pestilence. In these examples it appeared, at first thought, that the sick did as well as those who had the diligent service of their physicians, hence the opinion prevailed in some localities that patients were better off without medicine: in plainer words, "without a doctor." Again and again had I the opportunity during that epidemic of observing the march of symptoms where nothing was done for the sick other than the administration of warm teas, plenty of cool water, and a simple diet of milk and bread. But such management was not invariably successful in conducting the patient to safe convalescence; indeed, it was really unsuccessful, but the deaths were charged to the "will of God!"

It was by such impressive lessons at the very threshold of my experience in practice that I formed my acquaintance with the disease, and became assured of the value of the great truth that "violence in therapeutics is never justifiable when moderation is adequate to the same good end." And this is the foundation on which, year after year since that time, I have laid my observations, and builded the confidence which brings me with a fresh offering on some points in the natural history of enteric or typhoid fever.

Forms of the Disease.—In my studies I have been naturally led to recognize *three forms*—the simple, or mild; the intermediate; and the malignant, including the fatal—rather than a division of stages by weeks; and I think this arrangement fully warranted by the clinical history. It may be extremely difficult, in some instances, to say just where the distinguishing or dividing line should be drawn, so very gradual is the transition from one form into the other; but in the large majority of cases there is little difficulty in recognizing it.

Incubation.—The period of incubation, or the length of time between the date of the exposure to and inception of the specific poison, and the first manifestations of the disease, is as yet unknown, because the precise date of infection can rarely be ascertained; but its duration is, probably, in most cases about two weeks. Instances, however, have been given where the disease followed immediately, or within a day or two, after exposure.

Mode of Access.—The initial symptoms or mode of access may vary considerably. In a few instances, there are no premonitions; in others the formative period may be extended from two to six, eight, ten, or even twelve days; and these differences may occur without foreshadowing the exact type of the fully developed disease.

As showing the suddenness of attack in some instances, I give the case of Mr. W., a young lawyer, who, while engaged in defending a client indicted for a felony, and when reading the climax of his argument was so completely dazed for the space of half a minute or more that he stood motionless and speechless, staring at the judge. His long pause soon attracted general attention in the court-room; but just at the moment of greatest surprise at his conduct, he came to himself, connected his speech with the word at which he had left off, and went on to its conclusion without further embarrassment either of thought or speech. When he went into the court-house that morning he was in his usual good health; when he left it that afternoon to go to his home, not far off, he felt physically unwell, and mentally oppressed with the weight of some impending dreadful calamity. Feeling confident that he was about to become dangerously sick he at once prepared his will and then went to bed. Within the first week of his illness he became delirious, and rapidly passed into the gravest form of the disease from which, six weeks later, he barely escaped with his life.

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Entirely the opposite, in mode of access, to the case above given, was that of Mr. T. G., aged thirty-six years, clerk of the county court, who drooped for two weeks before finding himself unable to pursue his accustomed business, and confining himself to his house. The next three weeks he arose every morning, dressed as usual, and spent the day in reading, writing, or other light occupation to while away the weary time; resting and napping on the sofa, as his inclination prompted. At the expiration of this period I was hastily called early one morning to learn that a short time before my arrival he had been suddenly seized with severe pain in the abdomen just after rising from his bed and while dressing. His countenance was pinched, and pale as death, and he died within the next thirty hours from perforation of the bowels.

Between these wide extremes the *prodromic* period may be as varied as there are days in the limits; but, as a rule, the disease is fully developed by the fourth or fifth day from the time the first feeling of *malaise* is experienced. This declaration is based on the observation of 130 consecutive cases in which I carefully endeavored to ascertain this and other not less important points concerning the disease. Headache and backache—frequently accompanied with slight nausea—start the clinical history. The pain in the head is usually referred to the occiput, but in many cases the entire head aches; while backache extends from the root of the neck to the coccyx. There is a feeling of vertigo, and both mental and bodily languor are plainly manifested. The appetite is impaired, the tongue furred, and the mouth pasty, with offensive breath, and unnatural thirst. A shivery feeling now and then comes over the surface, alternating with flushes of heat; the pulse quickens, usually to ninety or one hundred in the minute; sleep is interrupted by an evening exacerbation of febrile excitement, and the patient awakens without feeling refreshed; the urine is somewhat scanty and high-colored and the bowels are either simply relaxed or there is free diarrhœa, in either case accompanied with a sensation of increasing fulness of the stomach.

Hour after hour, or day after day, all these ill feelings become more pronounced and distressing, when, at last, a sensation of chilliness more severe and prolonged is felt, with an aggravation of the headache and backache, and the patient now willingly goes to bed to take on and pass through one or the other of the forms of the disease classified on a preceding page.

The Mild Form.—Sixty-four of the 130 cases above referred to were of the mild form, and a majority of them terminated in convalescence between the thirteenth and eighteenth day—the range for the whole number being from nine to twenty-five days.

In this class of cases, following the exacerbation of symptoms which completes the measure of the *formative stage* and ushers in the fully developed disease, the pulse becomes more frequent, say ninety or one hundred and five in the minute; there is increased heat of skin, the temperature gradually rising from one to two degrees higher in the evening than in the morning for four or six days, at the end of which time the range is between 101° and 104° Fahr. in the evening, with a fall in the morning of from one to two degrees. With the steady rise of temperature respiration becomes more hurried, and slight cough sets in and is accompanied with quite free expectoration toward the close of the fever. The headache continues from five to ten days, and when it ceases is usually lost in the obtuseness or drowsiness which is such a common trait during the second week of the disease. There is throbbing of the temples; the face is flushed, and toward evening, when the fever is highest, purple spots appear on the cheeks—first upon one cheek and then on the other; or the nose may present the same livid color and a swollen appearance. The tongue may be coated so thinly as scarcely to be called coated, or covered with a thick white or yellowish fur, thickest at the middle and occasionally dotted with aphthous-looking specks; and it is moist when the patient is not sleeping. At its tip and edge the coating loses itself, leaving the mucous membrane clean, bright, and shining. In many cases the fur disappears in large patches, giving the appearance of loss of the mucous membrane on such places. If *malaria* complicates the case, the tongue is broad, flabby, and presents a creamy coating; otherwise it is not changed in size, does not assume the pointed shape, nor show the brown stripe along its middle, so common in the graver forms of the disease; and it does not tremble when protruded. The abdomen is tumid, tender, and gives a gurgling sound from the right iliac fossa when deep pressure is made over this region; wandering pains in the stomach and bowels may be complained of, accompanied with nausea and occasionally free vomiting. There is loss of appetite, if not entire disgust for food; thirst is excessive, the patient calling for water every few minutes; the bowels incline to looseness and sometimes there is free diarrhœa; the discharges are of the "pea-soup" variety, flocculent, and of a peculiar and very offensive odor. The urine is diminished, highly colored and turbid. Sleep is not refreshing, and the sleeping hours are disturbed by unpleasant dreams. A very common mental condition during sleep is the impression that the body is severed in pieces, and much worry is occasioned by the unsuccessful efforts to reunite the fragments; or, if not

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this distress, some other imaginary accident befalls the patient, who, in his efforts to extricate himself, suddenly wakes and manifests confusion as to his identity and whereabouts.

Dulness of hearing is one of the most unvarying conditions in the disease. Epistaxis is also exceedingly common, and often is repeated several times during the first two weeks. The rose-colored lenticular eruption is usually present. Indeed, I have seldom failed to find it at some stage of the disease —generally between the seventh and fifteenth day. In my experience, it has been the rule to discover the largest patches of the eruption in cases which were least troubled with profuse diarrhœa. In other words, it has seemed to me that the cases with the least intestinal alteration are those in which the eruption is most profuse. Sometimes I have seen the patient spotted from head to foot; in other instances the eruption was principally confined to the chest, abdomen, and inner part of the thighs; or showed itself on the fingers and toes, while but few spots could be found on the trunk. Again, I have frequently seen it profuse on the back, and I am inclined to believe that it occupies this part of the surface oftener than is generally known, for the reason that it is not so conveniently sought for as when upon the abdomen, chest, and extremities. Of the vesicular eruption called *sudamina*, I have but this to say: I have seen it in very few instances, all of which were in cases of the form of the disease next to be described, and preceded by profuse perspiration. Finally, there are few cases of enteric or typhoid fever in which enlargement of the spleen may not be discovered.

Amelioration of these symptoms, shown by lower temperature, relaxed and gently perspiring skin, refreshing sleep, cleaning tongue, relish for food and diminished thirst, less frequent and more consistent stools, increased secretion of urine, soft and flattened abdomen, and by brighter countenance but with marked shrinking of the features, is the pleasing warrant of Nature's triumph, and that convalescence has been reached. Yet, such a happy termination may be suddenly thwarted by an aggravation of all the symptoms and the patient placed in greater danger than before; or he may suffer from a true relapse—the cause of which may be impossible to determine—and go over again, and through great dangers, the road he has just travelled. And thus the case may run a mild course throughout or take on at the beginning of the illness the graver symptoms I have distinguished as belonging to the intermediate form.

The Intermediate Form.—In this class there are but few symptoms to be recited that have not already been included in the description of the mild form. Thirty-two of the 130 cases presented, either at the beginning of the attack or during the second week, the exacerbation of symptoms characteristic of this form. With the same variable period of incubation and difference in mode of access, the febrile exacerbations are more prolonged and followed less frequently by moisture of the skin. The temperature rises gradually to 104½° or 105° in the evening and falls not more than a degree or two in the morning. In other words, the high temperature is more constant at all hours of the day and covers a longer period. The pulse also is much accelerated, and soon becomes dicrotous because of the weak heart; the tongue takes on a thicker and darker coating except at the tip and edge, where it is red and shining, and it presents also a dark-brown stripe down the middle. Its surface is dry and concave, the edge thin and apparently contracted, the tongue resembling somewhat in form the bowl of a tablespoon with its point bluntly rounded, and cracked. When told to show his tongue the patient is slow in comprehending the request, and the effort is a trembling one, showing blunted sensibility and grave systemic involvement. At the same time *sordes* begin to form on the teeth, gums, and lips, and the angles of the mouth are cracked and bleeding. Somnolence becomes more and more profound as the case advances toward the crisis (except in the few instances where, instead, morbid vigilance is present); the countenance is dusky, and the mind and senses greatly blunted. In many cases the dulness of hearing is so extreme that it is with difficulty that the patient can be aroused and his attention secured.

Wandering of the mind, at first noticeable only at night—especially during the second week of the fever—is now present at all times in the majority of cases. The patient sees the bedposts transformed into disagreeable personages who have taken their position at the foot of his bed to annoy and insult him by their grotesque performances; and under this provocation he starts up in anger to drive them from his presence, when the physical effort thus put forth dispels the illusion, and he falls back upon his pillow wondering how it was possible he could have been so much mistaken. Soon, however, his Quixotic sally is repeated, and in that way he goes on day after day and night after night, sleeping, dreaming, and wandering, except when his attention is rationally engaged.

In this condition, notwithstanding the continued high temperature and dry and parched tongue, the patient does not ask for cooling drinks; in fact, he has now become to a great degree insensible to his natural wants, for when his bowels are moved the disposition to empty them is not felt until just before the discharge takes place, and in the hurry to get him on the bed-pan, the sheets and other bed-clothing are frequently soiled. The same obtuseness

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sometimes permits the bladder to become greatly distended before the desire arouses the patient to the necessity of emptying it. Diarrhœa, either mild or profuse, is always present—I mean liquid stools—and the frequency of the discharges from the bowels governs, usually, the extent of meteorism. In other words, if diarrhœa is profuse, there will be in the same proportion extensive tympany and abdominal tenderness. In many cases the diarrhœa does not exceed more than two or three stools in the course of twenty-four hours; but it is more common for the number to reach a half-dozen in that time. As a rule, the stools are darker and far more offensive than in the mild form of the disease, and they are often attended with sharp pain about the umbilicus. Now and then they are bloody; but the intestinal hæmorrhage is not so extensive as in cases of the malignant form.

The urine, passed in smaller quantities, is deeply colored, and often voided with much difficulty. Epistaxis may be so frequent and profuse as to put the patient in great jeopardy. The smaller number of rose-colored spots in this form of the disease has already been stated; and it is also unnecessary to repeat what I have said concerning the presence of sudamina. Great prostration of muscular strength is an invariable condition, and in a vast majority of cases, *subsultus tendinum* is present. It is in this form that we find, very often, troublesome cough and sputa streaked with blood.

And thus the intermediate form may go on undetermined for a few days or for many days, flattering the physician at one time with the approach of convalescence, at another time exciting his deepest anxiety. At the close of the second week, or about the beginning of the third week, it is not at all uncommon to find that a great improvement in the symptoms has taken place quite suddenly; so much so that the attending physician may find that since his visit the day before the tongue has become moist and has cleaned a little, the countenance brighter, and in every other particular a correspondingly happy change, when, as suddenly, and without apparent cause, the patient becomes worse than at any previous time. This unfavorable turn of the symptoms may continue but a few days before convalescence is reached, or it may send the patient into the gravest form of the disease, now to be described.

The Malignant Form, including the Fatal.—Enteric or typhoid fever may assume the malignant form in the beginning of the attack; but this is not generally the clinical history, for in the majority of cases it is preceded for a longer or shorter period by one or the other of the milder forms. For example, of the 130 cases to which I have before referred, and which in part furnish the basis for my positive opinions on this and other equally important points, 25 cases passed through the milder gradations, with variable duration, before reaching this form. So, in order to present a continuous and faithful description of the disease from the moment of development to its termination, it is necessary to go back to the point at which I completed the description of the *intermediate form*, and then to proceed with the graver assemblage of symptoms to the end.

After the exacerbation of symptoms which marks this form of the disease, the progress is usually rapid to the final termination. Prostration of strength is an ever-present condition. The patient is now rarely found on his side, for he has not sufficient strength to maintain that position and must lie on his back, with a disposition to slip down in the bed. The pulse is frequent and feeble; there is constant twitching of the tendons of the wrists, and sometimes the whole body is in constant tremor from muscular twitching, to such a degree in some cases that even the bed-clothing is in constant wave-like movement, or if one sit on the bed-rail a trembling sensation is distinctly perceived. The voice becomes changed; so feeble in some cases that it can scarcely be raised above a whisper; in others the articulation is so imperfect that all attempts at conversation amount to little more than a trembling jargon. The tongue takes on a thicker and black coating, and all efforts to protrude it are slow, trembling, and uncertain; and when protruded, if the patient is not otherwise directed he will probably leave it exposed. With this state of the tongue and with the general insensibility, deglutition is often interfered with and food and drinks are taken with much difficulty.

The temperature of the surface may be uniform or unequal; the head and trunk hot and dry while the extremities are cool, or the face and hands sweat freely while other parts of the body are dry. In every case with this grave condition more or less cough is present, accompanied at one time with free expectoration, at another nothing but frothy, sticky mucus is expelled; loud râles are heard, breathing becomes hurried and occasionally irregular or jerking. The temperature line shows little variation between the extremes of evening rise and morning fall; is fitful and undulatory at all times. The condition of the abdomen and state of the bowels are also fair measures of the seriousness of the case; the tympany makes a convex surface from the ensiform cartilage to the pubes, and when pressure is made the abdominal wall seems thin, hard, and resisting "as though made of pasteboard," and scattered here and there over its surface are a few *rose-colored* spots.

The stools are very offensive, of a dark color, and so sticky that the bed-pan or chamber-pot is emptied

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and cleansed with difficulty. In color and consistence the discharges resemble dark-brown paint; but when slight hæmorrhage takes place and the blood is retained for a few hours, the discharges are black and tarry and exhale a most sickening odor. It is always in this form of the disease that the most frequent and profuse hæmorrhages take place. In many cases the blood discharged from the bowels is red and but little changed; in others it is dark and disintegrated. Several times I have seen the usual sized chamber-pot half filled at a sitting, and in one case the patient fainted and fell from his chair to the floor, and was put back in bed almost lifeless. In this case hæmorrhage succeeded hæmorrhage until the eighth day from the first bloody discharge, when he died. Eighteen of the 34 cases, before referred to, suffered hæmorrhage from the bowels, and of these 8 were fatal. In this form of the disease, I have seen the patient bleed from the nose, from the gums, from the bowels, from the bladder, and from the petechiæ.

The urinary secretion shows much alteration of character. It is scanty and dark as lye, and when there is hæmorrhage from the bladder small particles of coagulated blood are deposited on the bottom of the vessel. The urine may be retained, either with or without admixture of blood, requiring repeated use of the catheter. Delirium, so common in this form of the disease, may be either mild, violent, or low and muttering; the patient picks at the bed-clothing, or reaches out his hand to catch some imaginary object. In a few instances I have seen the delirium strictly monomaniacal. Involuntary discharges both of urine and fæces frequently take place and then there arises from the patient's body a most nauseating odor. In addition to the above described conditions, the skin may break on parts most exposed to pressure, as the sacrum, hips, and shoulders, which is followed by sloughing. All these show vitiated constitutional powers.

Finally, when the case is to end in recovery there is improvement of all the symptoms, and the patient passes, sometimes quickly and at other times slowly, through convalescence to health. But if death is to be the end, it may come in different ways, according to the lead of symptoms. If by coma—the most frequent mode of death in enteric or typhoid fever—the low muttering delirium from which the patient could at first be aroused, gradually becomes more and more profound until complete insensibility is reached; the jaw falls by its own weight and the mouth is open, the lips tremble, the muscles of the face twitch, the eyelids are half closed, the balls upturned and roll from canthus to canthus; petechiæ and vibices make their appearance on various parts of the surface; the parotids swell and may suppurate; the pulse beats so rapidly that it can scarcely be counted; the breathing is rapid, and automatic efforts are made to expel the secretions which choke the lungs and rattle in the throat, a cold, clammy sweat breaks out, the extremities become cold, there is a final struggle, and Death has won the mortal victory! In fewer instances the fatal result is reached by almost imperceptible degrees; from first to last the mind remains unclouded, and the patient passes away without a struggle.

Thus I have completed the description of a case either *mild* throughout, or having been mild for a longer or shorter time, passing into the *intermediate* form, then either convalescing or passing into the *malignant* form.

Of the 34 cases of this form, 9 assumed this character at the beginning of the fully developed disease, 6 of whom complained of feeling out of health for three days previous to taking to their beds: the remaining three retired as usual and in good health to awaken next morning with headache, sick stomach and vomiting, a chill, and then fever. In all of these cases the mind and senses were quickly involved, as shown by aversion to light and sound, morbid vigilance, confusion of ideas, followed as early as the second or third day by active delirium, which continued until lost in *coma*. After such beginning, a case proceeds as above described to its final termination.

Supplemental and Emphasis.—In presenting the foregoing description of the symptomatology, sufficient emphasis of certain conditions seemed impossible without interrupting and confusing the connected clinical history of each phase of the disease; hence, I shall now endeavor to cover the deficiencies to which I refer.

Headache is so constant in its presence during the first week of the disease that it was found in 127 of 128 patients who were of sufficient age to express suffering. Sometimes it is exceedingly severe, assuming a neuralgic character, and it may continue through the whole course of the disease.

The state of the mind and senses varies with the different forms of the disease, from listlessness of manner and simple wandering of mind with a blank, dejected expression of countenance, to the wildest delirium. A very common impression with the patient is that he is away from home and exposed to personal injury; thus influenced, he jumps out of bed if not restrained, and makes for the door. Delirium is equally common in children, but of milder form than in adults. Of 23 cases of the malignant form of the disease terminating in recovery it was present in 21; and of 11 fatal cases it was distinctly marked in 10, the exceptional case passing down to death without a cloud to obscure its approach. Some-

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times it is of long duration, continuing for three weeks, and it may present any grade or character. In other cases there may be a sudden outbreak of mental disturbance during the period of convalescence. In one such case after the patient had proceeded so far on the road to health as to be able to go out of doors for several days, he was suddenly overcome with illusions which continued for a few days and then as suddenly disappeared, leaving no impress or mark behind.

Dulness of hearing is so complete in some cases that in order to arouse the patient he must be spoken to at the highest pitch of the voice. In a few instances the reverse of dulness exists, and the sense may be so acute that the slightest noise attracts attention, even the light step of the nurse across the floor, and unless there is perfect stillness in the room the patient is painfully discomforted.

Prostration of muscular strength is such a constant condition from the beginning to the close of the disease—such a fair measure in forming the prognosis—that its importance cannot be too strongly emphasized. Even during the formative stage, and before the patient takes to his bed, his gait is tottering, and if he attempt any manual labor he is soon fatigued. In the *mild* form when he is placed in a chair in order that his bed may be made up and aired, he soon tires and is impatient to lie down. In the *intermediate* form he must have assistance to hold up his head for a drink of water. In the *malignant* form there is utter prostration. An increase of the strength is the sure harbinger of convalescence. In the so-called "walking cases," loss of muscular strength is the most that is complained of.

Accidents and Sequelæ.—The most fearful of the accidental inflammations is peritonitis, the result of perforation of the bowels, the symptoms peculiar to which are so well known that it is unnecessary here to say more than that the accident occurs, usually, in the third or fourth week—in rare instances during convalescence—and is announced, in the majority of cases, by the sudden supervention of acute pain in the abdomen, accompanied with either a pronounced and severe chill or prolonged feeling of chilliness, with cool, clammy skin; acid eructations and vomiting; exquisite tenderness of the abdomen on pressure; great prostration of muscular strength; rapid, feeble pulse; and, after recovery from shock, abrupt rise in temperature.

I have seen in five instances all the symptoms which announce and follow perforation of the bowels, yet the patients recovered; so that I am led to believe the accident is not necessarily fatal. Four of the five cases to which I refer occurred in males, all, save one, over thirty years of age.

The safety of pregnancy seems to be but little influenced or endangered by the disease, for in all my experience I have not met with a half dozen abortions or miscarriages which could be charged to its presence. And there is good ground, I think, for belief that the pregnant state affords some immunity from the disease.

Among the sequelæ, I have seen frequent examples of swelled leg and thigh, like that which occurs in parturient women. This has been first noticed during convalescence. In one such case the swelling came on before the patient was able to quit his bed for the whole day; and in another case, at the opposite extreme, it was not noticed until during the third week after recovery from the fever. In some cases of this complication, especially those which have developed early in convalescence, the swelling is accompanied with pain and tenderness; but ordinarily with the accident there is no complaint other than of a feeling of stiffness and slight lameness. I have never seen a leg thus affected go back to its normal size and proportions.

Special Memoranda.—Season. The autumnal and winter months, according to my observations, give the largest number of cases.

Age. A large majority of cases occur between the ages of fifteen and thirty years; yet I have seen the disease in an infant of eighteen months—the mother sick at the time with the same disease—and, at the other extreme, repeatedly in subjects over sixty years of age.

Sex. The disease more frequently attacks males than females.

Race. The disease is probably less frequently met with in the negro than in the white race.

Immunity in Certain Localities.—In an early part of this paper, when referring to the wide diffusion of the disease, I mentioned the fact that in certain places it had rarely been met with, and never witnessed in endemic or epidemic form. Chattanooga is one of these remarkably favored places where enteric or typhoid fevor does not prevail, notwithstanding the city has a population of 60,000, and is embarrassed by very serious sanitary defects such as are common to all new and rapidly growing cities, namely, insufficient sewerage, many miles of unpaved streets and alleys, and thousands of open cesspools in the form of the old-fashioned privy vault.

Dr. P. D. Sims, a member of the State Board of Health, who has been in active general practice for more than thirty years in that city, and is a most competent observer, says that in all of his experience in Chattanooga he has seen but three or four cases of typhoid fever. Like testimony is furnished by Dr. J. H. Van Deman, who, until the last three or four years, had been engaged in general practice since 1865, or from the close of the war, when he left the army. The observations of Drs. Sims and Van Deman have been confirmed by a score or more of later witnesses who from time to time came to the city.

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Chattanooga is situated in the great Moccasin Bend of the Tennessee River, at the foot of Lookout Mountain, with an altitude of 650 feet above sea-level, and surrounded by high hills and mountain ranges that rise above the city from 600 to 1650 feet. The prevailing winds from March until December are either from the southwest—sweeping the top of Lookout Mountain, whose base is but three miles distant from the centre of the city—or from due west, when they come laden with freshness and health from the Raccoon Range, but four miles away, which is 1400 feet above the level of the city. In winter the prevailing currents come from Walden's Ridge, six miles to the north, which walls the valley on that side. In the undulating cove in which Chattanooga stands, with her "seven hills," like the Eternal City, she is sheltered on all sides; possessing a stable, genial climate, blessed with good general health at all seasons, and adding every year thousands to her thriving, busy population.

The United States Signal Service report from Chattanooga Station for ten successive years shows the temperature to be as follows:

Mean Temperature.

For the Year.	For Winter. Dec, Jan, Feb.	For Summer. June, July, Aug.
1879. 60.7°	44.5°	76.4°
1880. 60.3°	45.7°	76.2°
1881. 60.8°	42.6°	79.0°
1882. 60.3°	44.7°	74.9°
1883. 60.8°	45.7°	76.9°
1884. 59.6°	42.0°	74.2°
1885. 57.7°	39.2°	76.4°
1886. 57.3°	36.6°	73.9°
1887. 60.1°	43.6°	76.2°
1888. 59 1°	43.2°	76.2°
1889. 60.4°	47.2°	75.1°

The total rainfall for the same period was as follows:

Total Rainfall.

For the Year.	For Winter.	For Summer.
1879. 4.34 inches.	7.60 inches.	8.88 inches.
1880. 5.65 "	4.23 "	3.61 "
1881. 5.8 "	6.57 "	3.43 "
1882. 5.16 "	8.20 "	4.71 "
1883. 4.16 "	5.49 "	3.21 "
1884. 5.15 "	7.16 "	5 51 "
1885. 4.72 "	5.13 "	5.00 "
1886. 4 88 "	4.38 "	4.88 "
1887. 4.26 "	6.07 "	3.54 "
1888. 4.57 "	4.57 "	3.57 "
1889. 4.11 "	3.62 "	3.75 "

During the last three winters, or since my residence in Chattanooga, I have not seen snow on the ground.

The Annual Death-rate.—In ordinary years the death-rate does not exceed twelve per thousand per annum, including both races; and if the entire population were white, it would not, probably, exceed ten per thousand.

Conclusion.—Diphtheria is also an unknown disease in Chattanooga, and the same is nearly true of scarlet fever. No doubt that now and then examples of all three of these diseases have been met, brought in the persons and baggage of visitors; but the seed, when imported, uniformly failed to multiply.

The miasmatic remittent fever met with in Chattanooga sometimes assumes grave character, and then often presents the so-called "typhoid state;" but its clinical history in every essential particular is wholly unlike enteric or typhoid fever. Since taking up my residence in the city, I have had good opportunity to observe the changes in the blood in malarial cases, and am entirely convinced of the value of Laveran's researches in deciding the difference between malaria and enteric or typhoid fever. And here I desire to acknowledge my indebtedness to our own countrymen, Councilman and Osler, for their distinguished labors in the same field. Again and again have I been able, easily and quickly, to clear up the diagnosis by a microscopical examination of the blood in cases of doubt; for, in the language of Dr. Osler, "the characteristic changes in malaria are as distinctly determined in the blood as are those of tuberculosis of the lungs in the sputa."

CATALPA SPECIOSA (*WARDER*).[1]

BY J. SCHNECK, M.D.,
OF MT. CARMEL, ILL.

THE genus Catalpa is represented in North America by two beautiful trees: first, *Catalpa speciosa*, Warder, which grows in low, rich bottom lands along the rivers of Southern Indiana, Southern Illinois, Tennessee, Missouri, and Arkansas; second, *Catalpa bignonioides*, Walter, which is more southern in its habitat, and is found in Georgia, Alabama, and the Carolinas. This is a smaller and more spreading tree than the former. Until the year 1853 botanists regarded them as of the same species. It is important to bear this fact in mind, as authors who write of the tree as seen in the Eastern and Southern States refer to C. bignonioides, while those whose observations are made in the Middle or Central States refer to C. speciosa. The latter is the species considered in this paper.

They are generally regarded as the same species by the laity, and are known as the patalfa, catalpa, Indian bean, catawba, and cigar tree.

The genus belongs to the *bignoniocæ*, which is a large order of, chiefly tropical, American plants. They are especially noteworthy for the beauty of the flowers of many of the species. The wood, bark, and leaves of C. speciosa emit a fœtid odor when handled or burnt; this unpleasant odor is not shared by the flowers, which are pleasantly fragrant.

[1] Read before the Illinois State Medical Society, May, 1890.

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From earliest childhood I had been taught that the tree was poisonous; and this view is shared by the people generally in the vicinity where it grows. On consulting early botanical literature I find this belief has existed from our first acquaintance with the tree. F. A. I. Waugenheim, a German forester, who served in the British army during the Revolutionary war, published, in 1787, *Notes on American Forest Trees*. Of *catalpa* he says:

"The white inhabitants in America affirm that the negroes in the Southern States are in possession of a secret method by which they can prepare, from the roots of this tree, a slow, but always most serious, poison. The inhabitants of Carolina, Virginia, and Maryland are so assured of it that the catalpa trees are extirpated in the vicinity of all the habitations and plantations; and that a law passes sentence of death upon the negro who secretly plants or cultivates the tree."

Ludgi Castiglioni, who travelled in this country from 1785 to 1787, published an account of his journey, in which he refers to the same prejudice. He says:

"The catalpa trees were banished from the lawns and gardens in Pennsylvania when the rumor was abroad that the negro slaves made use of them to poison their comrades."

He then discredits its poisonous properties, but says: "A decoction of the wood provokes vomiting, but it produces no other bad effects on the system."

Kämpfer and Thunberg state that, in Japan, the pods of a closely allied species are used to relieve persons suffering from asthma and bronchitis, and that a poultice made of the leaves is valuable in relieving the severe pains of neuralgia. In his inaugural thesis to the University of Pennsylvania, 1803, Dr. Robert Holmes refers to a popular belief in its prophylactic properties in warding off malarial and contagious diseases.

In the following experiments and applications I have used a tincture, prepared by myself, from the inner or live bark of the root and body of the tree. It was made by the old, or maceration, method, using an ounce of the fresh bark to make an ounce of the tincture. The experiments were made upon my friend Mr. G. B. Davidson, a man of excellent mental attainments, and myself. We were both then nearly thirty years old, and in excellent health.

RECORD OF EXPERIMENTS ON DAVIDSON.

Date.	Temp	Pulse. Sitting	Pulse. Standing.	Remarks.
1876				
Mar. 14				
3 P.M.	.....	70	...	Took one ounce of the tincture.
4 "	.....	70	...	Could feel no effects of the drug; took one ounce of tincture.
Mar. 22				
12 M.	.....	76	...	Ate a hearty meal.
1½ P.M.	101½	76	...	Took one ounce of the tincture.
2½ "	100	72	...	No effect from the drug; took one ounce of the tincture.
3½ "	98½	72	...	" " " " " "
5½ "	99	78	...	" " " " " "
6½ "	98	72	...	No effect from the drug; ate a hearty supper.
8 "	99½	78	...	Took two ounces of the tincture.
9 "	98½	69	...	No effect from the drug; took two ounces of the tincture.
11 "	99	66	...	Nausea, and the pulse weak; nausea during remainder of the night, and the following morning two large semi-solid stools.
Mar. 25				
8½ A.M.	98¾	72	...	Took two ounces of the tincture.
9 "	98	72	...	No effect from drug: took two ounces of tincture.
9½ "	98¾	68	78	" " " " " "
10 "	98¼	66	72	Pulse irregular; slight nausea.
10½ "	98¼	66	78	Pulse irregular; took two ounces of the tincture.
11 "	98	68	78	" " " " " "
11½ "	98½	68	76	Pulse irregular and weak.
12 M.	98¼	66	80	Pulse irregular; had several copious stools during next twelve hours, semi-solid and dark color.
Mar. 27				
1 P.M.	98¾	94	103	Ate a full meal at twelve o'clock, then walked nearly a mile.
2 "	98¼	87	94	Read almost constantly between the time of making the notes.
3 "	99	87	92	These observations are made as a comparison with the foregoing.
4 "	98½	84	90	

RECORD OF EXPERIMENTS ON SCHNECK.

Date.	Temp.	Pulse. Sitting.	Pulse. Standing.	Remarks.
Mar. 22				
12 M.	.....	...	...	Ate an ordinary meal.
1¼ P.M.	101¼	78	...	Took one ounce of the catalpa tincture.
2½ "	98¾	66	...	Slight burning sensation in the stomach; took one ounce of tincture.
3½ "	98¼	60	...	" " " " " "
5½ "	99¼	66	...	Burning sensation in the stomach less; have taken severe exercise since last dose; took one ounce of tincture.
6½ "	98½	72	...	Burning sensation in stomach almost stopped; ate hearty supper.
8 "	99	72	...	Felt no effect of the drug; took two ounces of tincture.
9 "	98¾	72	...	" " " " " "
10 "	98¾	72	...	" " " " " "
Mar. 25				
7 A.M.	.....	...	...	Had a copious semi-solid bilious stool.
8½ "	98½	75	...	Took two ounces of tincture.
9 "	98½	76	...	Felt no effects; took two ounces of the tincture.
9½ "	98¾	66	84	" " " " " "
10 "	99	68	72	Decided nausea; pulse weak.
10½ "	97	66	78	Nausea less; pulse weak, dropping two or three beats per minute: took two ounces of the tincture.
11 "	96¾	62	73	Nausea slight; took two ounces of the tincture.
11½ "	96½	63	78	" " " " " "
12 M.	97½	63	78	Decided nausea; no desire for food.
To compare with the above, I made the following observations:				
Mar. 27				
1 P.M.	98	74	81	Had taken a regular meal at 12 M.
2 "	99	78	84	
3 "	99	70	72	
4 "	98½	70	72	

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From the above experiments we may deduce the following:

1. That with drachm doses of the tincture unless continued for a considerable time the system is but slightly affected.

2. That if taken in large enough doses it will slow the heart-beats, weaken its action, and finally produce an intermittent pulse.

3. That it acts on the alimentary secretions, producing a mild cholagogue, cathartic effect.

4. That in sufficiently large doses it produces nausea, and probably, in still larger doses, vomiting. It is probable that in this way it acts beneficially in asthma and bronchitis.

5. That by its sedative action on the heart it acts as an antipyretic.

In its clinical application I have found it most beneficial in those cases of pneumonia where the secretions of the alimentary canal were inactive and in which there was also a rapid and full pulse. It reduces the pulse-rate and tension, and increases the biliary secretion. Two drachms of the tincture should be given every one to three hours.

During the past winter I have used it often in cases of epidemic influenza with high fever, and especially where the inflammation extended into the frontal sinuses. In all of these acute cases I have never ventured to continue the remedy after the first two or three days, and have given it for this period only in sthenic cases. I have thought it best to feel my way carefully in using a new remedy whose principal action is on an organ so vitally important as the heart.

Mr. E. O. Rau has made an imperfect chemical analysis of the seeds; he obtained from them tannin and a bitter crystalline principle.[1] Mr. F. K. Brown, by a more thorough analysis of the seed, found a resin, tannin, sugar, a fixed oil, and two undetermined crystalline bodies.[2] It is reasonable to suspect that the medicinal qualities reside in the crystalline principles mentioned in the above analyses. It remains for chemists to tell us in which part of the plant they are most abundant, and, if possible, to isolate them, so that they may be used for further and more definite experiments. I present these notes and conclusions as the results of careful observations, and hope the medical profession will give the drug a thorough trial.

CLINICAL MEMORANDA.

PÆDIATRIC.

A Case of Imperforate Anus in which the Fæces were Passed through the Penis, and later through the Umbilicus Autopsy.—This rather remarkable case occurred in the practice of Dr. C. A. Munn, of Kingston, N. Y. I first saw it when the child was three weeks old.

Dr. Munn was called on the evening of February 23d to attend Mrs. S., aged twenty-four years, a primipara, who was in labor at term. The woman was delivered in a few hours of a male child weighing about six pounds. Upon examination the infant was found to be well formed with the following exceptions: It had an imperforate anus, or, more correctly, there was complete absence of an anus or anything resembling one. The skin was perfectly smooth from the end of the coccyx to the scrotum, and there was no raphé. On examination with the finger the parts felt firm and solid, and it was impossible to push the end of the finger even a short distance into the lower end of the bowel. There was never any bulging present, as is the case when the rectum becomes distended with fæces. The child urinated naturally, and also passed its fæces through the penis.

This continued for about three weeks when the nurse stated that it passed its urine and fæces from the umbilicus. It lived to the age of five weeks, and during the last two weeks of life passed the greater part of both urine and fæces from the umbilicus, although at times urine would pass through the urethra. The discharge from the umbilicus was not constant, but took place at regular intervals.

In addition to this malformation the child presented other deformities. The bones of the right forearm were rudimentary, being only about one and one-half inches in length, and very small. The right hand was not deformed, though strongly flexed. The bones of the right leg presented a similar peculiarity; they were about the same length, and the foot was attached in much the same manner as the hand described above. The foot also turned inward, and, in truth, would be termed club-foot if the bones of the leg had been of the usual length.

The mother of this child was a quick-tempered hysterical woman, and during pregnancy had had several hysterical attacks, one of which I witnessed. Her husband was somewhat dissipated, and whenever he was under the influence of liquor she would become excited, throw herself on the floor, tear her hair, and cry until she was exhausted. Whether this had anything to do with the deformity of the child it is, of course, impossible to say.

Autopsy, twelve hours after death, by Drs. C. A. Munn and J. Chambers, assisted by the writer. Rigor mortis absent. Great emaciation. Livid discoloration of abdomen, which was intensely swollen. Intestines distended with gas. Lungs, liver, and spleen not examined. Left kidney much smaller than right, both markedly nodular. The cavity of the pelvis was greatly contracted, the tuberosities of the ischia approaching each other very closely. The anal aperture was wholly wanting. There was entire absence of a sphincter. The genital organs were normal, the penis being somewhat diminutive. The rectum terminated in a *cul-de-sac*, and at its lower extremity a fistulous communication with the bladder was found; a probe passing readily from the one to the other. The bladder was imperfectly developed and retained the characteristics of early fœtal life. It consisted practically of a tubular sac, which was continuous with the urachus. The latter was still pervious, and thus allowed the urine and fæces to escape at the umbilicus.

[1] American Journal of Pharmacy, vol. xiii. p. 204.
[2] Ibid., 1887, p. 230.

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The late Professor S. D. Gross[1] writes of this condition as follows: "The rectum, instead of terminating at the anus, occasionally opens by a narrow canal into the *urinary* passages, generally at the posterior part of the urethra, or at the *bas-fond* of the bladder a short distance below the insertion of the ureter; the former mode of communication being the more frequent. The malformation is almost peculiar to males, and generally proves fatal within a few days after birth, on account of the small size of the recto-vesical outlet not allowing of a sufficiently free discharge of fæcal matter. To this rule, however, occasionally an exception occurs. Thus in a case which I attended with Dr. Kempf, and in which I made a very deep incision without reaching the bowel, the child survived six weeks, passing daily a little fæcal matter by the urethra."

In his description of the development of the urinary bladder, etc., Dalton[2] says: "This obliteration of the cavity of the allantois commences at its external portion and gradually extends inward toward the point of its emergence from the abdomen. The hollow tube, or duct, which connects the cavity of the allantois with the posterior part of the intestine, is accordingly converted, as the process of obliteration proceeds, into a solid rounded cord. This cord is termed the *urachus*. After the walls of the abdomen have come in contact, and united with each other at the umbilicus, that portion of the above duct, which is left outside the abdominal cavity, forms a part of the umbilical cord, and remains connected with the umbilical arteries and vein. That portion, on the contrary, which is included in the abdomen, *does not close completely*, but remains as a pointed fusiform sac, terminating near the umbilicus in the solid cord of the urachus, and still communicating at its base with the lower extremity of the intestinal canal. This fusiform sac becomes the *urinary bladder;* and in the fœtus at term the bladder is still conical in form, its pointed extremity being attached, by means of the urachus, to the internal surface of the abdominal walls at the situation of the umbilicus. Afterward, the bladder loses this conical form, and its fundus in the adult becomes rounded and bulging. The urinary bladder, as it appears from the above description, at first communicates freely with the intestinal cavity. The intestine, in fact, terminates, at this time, in a wide passage or *cloaca*, at its lower extremity, which serves as a common outlet for the urinary and intestinal passages. Subsequently, however, a horizontal partition makes its appearance just above the point of junction between the bladder and rectum, and grows downward and forward in such a manner as to divide the above-mentioned cloaca into two parallel and unequal passages. The anterior or smaller of these passages becomes the urethra, the posterior or larger becomes the rectum; and the lower edge of the septum between them becomes finally united with the skin, forming, at its most superficial part, a tolerably wide band of integument, the *perineum*, which intervenes between the anus and the external portion of the urethra."

This case seems to possess some peculiar features. Imperforate anus with a fistulous opening into the bladder is described in all the standard works on surgery. Stercoraceous and urinary fistulæ at the umbilicus are also alluded to, although they are extremely rare. But in this case both conditions were present. Furthermore, in fæcal fistula at the navel the anatomical arrangement is different. It is generally found to be dependent upon persistence of Meckel's diverticulum,[1] whereby the fæces pass directly from the small intestine to the opening at the navel; but in this case, as the autopsy showed, the fæces passed from the rectum through a fistulous opening into the bladder, and from thence, for the first three weeks, passed out through the penis. Afterward both urine and fæces, following the path of least resistance, made their exit through the pervious urachus at the umbilicus.

C. L. DODGE, M.D.
KINGSTON, N. Y.

[1] System of Surgery, vol. ii. p. 657.

[2] Treatise on Human Physiology, p. 667.

[1] For a full account of this structure, and the relation it bears to the vitelline duct, see article on "Imperforate Ileum," by Sutton, American Journal of the Medical Sciences, November, 1889.

MEDICAL PROGRESS.

Strophanthine.—DR. ROTHZIEGEL communicates some important observations on strophanthine (*Internationale klinische Rundschau*, May 19, 1890) of which the following is a summary:

1. The effect of strophanthine on the circulatory system is marked, the pulse becoming much stronger and more regular. The effect on the force of the pulse is noticeable in from five to ten minutes after the ingestion of a single dose. The influence on the rhythm is not apparent until the drug has been administered for several successive days.

2. The effects on the symptoms of valvular lesions are particularly well marked, both dyspnœa and palpitation being diminished, the former usually several days before the latter.

3. In cases of renal insufficiency due to cardiac weakness, strophanthine, after it has been given for some days, increases the secretion of urine; but as a rule the increase is not so great as after the administration of digitalis or tincture of strophanthus. This effect is apparently wholly due to increased blood-pressure and not to any direct effect upon the kidneys.

4. Gastric disturbances even after prolonged use of solutions of strophanthine are very exceptional, and they can be avoided by administering the drug in capsules. On the other hand, it often causes an increase in the appetite. Strophanthine has no effect on the functions of the intestines, nor on the sweat-glands.

5. The drug has no direct influence upon the nervous system.

6. There is no danger of cumulative effects, and it can be given for long periods without fear.

7. In heart-failure the subcutaneous injection of $\frac{1}{300}$ grain of strophanthine in solution is immediately followed by increase in cardiac power, and no local irritation follows the injection if done with antiseptic precautions.

8. As a rule the tincture of strophanthus is preferable to strophanthine; but there are cases in which neither the tincture of strophanthus nor of digitalis is well borne, and in such strophanthine is a valuable substitute.

9. The indication for the employment of strophanthine is cardiac weakness, whether due to valvular insuffi-

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ciency with or without disease of the myocardium, or to organic disease of the heart-muscle alone.

Rothziegel gives from $\frac{1}{24}$ to $\frac{1}{16}$ grain daily, in divided doses.

The Treatment of Endometritis by Curetting.—At a recent meeting of the Surgical Society of Paris, M. BOUILLY read a paper upon the treatment of endometritis by curetting (*Therapeutic Gazette*, May 15, 1890). He has performed the operation in 81 cases of endometritis, in 69 of which the results were carefully noted. The majority of the cases were uncomplicated, though in a few there was slight inflammation of the adnexa. He does not consider the operation advisable in cases complicated with laceration of the cervix, with ectropion, or with uterine fibromata. In most of his cases the operation was not performed until other therapeutic measures had failed. The symptoms in his cases were hæmorrhage during or between the menstrual periods, more or less abundant mucous or muco-purulent discharge, and irregular pains.

All the operations were performed during chloroform anæsthesia. The cervix was previously dilated with laminaria tents made aseptic with iodoform. The tents were inserted on two successive days; on the third the os was sufficiently dilated for the easy performance of the operation. Antiseptic precautions were rigidly enforced, and sufficient force to remove the entire uterine mucous membrane was used; the *débris* being removed with a swab. At the termination of the operation glycerin and creasote (2 : 1) was injected into the uterine cavity in cases of mucous endometritis; zinc chloride solution (1 : 10) if the disease was hæmorrhagic.

In the author's experience the operation has never been followed by complications, and in only four instances there was slight tenderness on each side of the uterus for a few days.

Of the 69 cases, 39 were cured; of the 30 cases remaining, 15 were improved and 15 were uninfluenced.

Pylorectomy.—SIR WILLIAM STOKES reports a case of pylorectomy for obstruction from pyloric cancer (*British Medical Journal*, May 3, 1890), and concludes his paper with the following propositions:

1. The recognition of the disease should, if possible, be made before any marked emaciation and weakness supervene.

2. In all doubtful cases exploratory measures should be adopted with the view of (*a*) forming a just estimate of the nature of the disease, (*b*) of determining the existence or non-existence of adhesions, or (*c*) the presence or absence of much glandular infiltration.

3. Washing out or irrigation of the stomach previously is a desirable antiseptic precaution, and can be easily carried out without exhausting the patient.

4. The protracted nature of the operation, as usually performed, unquestionably tends to promote shock and ultimate collapse.

5. With the view of shortening the operation it is desirable to determine what is an effectual and, at the same time, speedy method of inserting sutures.

Upon the last two propositions the case reported by TUHOLSKE, in THE MEDICAL NEWS of May 10th, has an important bearing.

Gurjun Oil as an Expectorant.—DR. WILLIAM MURRELL for a time used copaiba as an expectorant in chronic bronchitis, but though it was efficient, the frequency with which an eruption was produced led him to seek a substitute. He has finally adopted gurjun oil, which was at one time used to adulterate copaiba. Gurjun balsam, or "wood oil," is a balsamic exudation obtained by incision and the application of heat, from the trunk of an East Indian tree. It is a transparent liquid of the consistence of olive oil, of an opaque, dingy, greenish-gray color as seen by reflected light, and having an aromatic odor and taste not unlike that of copaiba, but without its acridity. He gave it first in doses of a drachm, and then of two drachms, three times a day, in the form of a mixture with liquor potassæ, spirit of nitrous ether, mucilage of acacia, and cinnamon water. After a time he gave it mixed with extract of malt—two drachms of the balsam to one ounce of the extract—three times a day, and this was taken without difficulty. The chronic bronchitics—many of whom had previously taken copaiba—reported that it acted admirably as an expectorant, "clearing the chest" and easing the cough. In several cases he gave in addition tincture of jaborandi or nitrate of pilocarpine at bedtime, so as to produce profuse sweating, but no eruption resulted. It seems to him that gurjun oil has all the advantages of copaiba as an expectorant, without the grave disadvantage of exciting an eruption. It has been recommended as a remedy for gonorrhœa and gleet, but he has had no experience with its use in this direction.—*Lancet*, May 3, 1890.

The Extirpation of Mammary Carcinoma.—DR. LEWIS S. PILCHER (*Brooklyn Medical Journal*, April, 1890), in discussing operations for the removal of mammary cancer, says that the researches of Heidenhain into the causes of local relapse of cancer after amputation of the breast seem to be of the greatest importance, and particularly his demonstration that in two-thirds of all cases of mammary cancer numerous cancerous deposits are to be found in the lymphatics which pass through the layers of retro-mammary adipose tissue to the pectoral fascia beneath, so that though the visible tumor may be freely movable over this fascia, nevertheless cancerous elements may be already present in the lymphatics of the fascia. These lymphatics accompany the bloodvessels which penetrate the muscle and thus become the channels of infection. Security from recurrence cannot, therefore, be obtained even in those cases in which the mammary growth is still apparently limited to the gland, except by taking away with it both the underlying pectoral fascia and a thick layer of the muscular substance itself. The practical lesson, corroborated by all the experience of the past in the almost certain recurrence after extirpation, is that no operation for the removal of cancer of the breast can be considered radical and trustworthy which does not combine free ablation of the breast and its overlying integument, with entire cleaning out of the glands and connective tissue of the axilla, and removal of the pectoral fascia and superficial layer of the portion of the pectoral muscle lying underneath the gland. Dr. Pilcher is ready to accept also, as a working hypothesis for the present, the suggestion as to the complete extirpation of the whole pectoral muscle when any part of it has become involved.

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INTESTINAL ANTISEPSIS.

THE subject of intestinal antisepsis is not new to the readers of this journal, nor, we trust, to the profession in general. Its importance, however, is certainly not fully appreciated, if one may judge from the absence of all reference to it in recent discussions on the disease—typhoid fever—in which it is most surely indicated. This would be pardonable if intestinal antisepsis, instead of being at the command of every practitioner, were an ideal to be attained by the therapeutics of the future.

The literature on this important subject is mostly of foreign birth or extraction, and the leaders of medical thought in this country, with few exceptions, seem indisposed to admit what is in Europe generally regarded as an accomplished fact.

No one can deny that the intestine is a species of laboratory in which are manufactured poisons of the most virulent nature, and that the chief barrier against their fatal invasion of the general circulation is the liver. This barrier may, however, be forced, and this happens when the liver is overcome by an excess of leucomaines, or, on account of functional disorder—*hepatic inadequacy*, so to speak—is unable to dispose of a normal invoice of these products.

These facts are no sooner stated than acknowledged; indeed they are property common to the layman and the physician. The association between such signs of systemic poisoning as ill-humor, hypochondria, and constipation, is proverbial, and no one has been more keenly appreciative of the fact than Voltaire, who terminates an admirable description of the good nature and benevolence of those whose bowels are regular with the statement that a refusal from the mouth of such a person is more gracious than an assent from one who is constipated.

In a recent article on the treatment of diarrhœa and constipation by Dujardin-Beaumetz (*Bulletin Générale de Thérapeutique*, April 15, 1890), the importance of intestinal antisepsis in both these conditions is insisted upon. The fact is not generally appreciated that purgation and antisepsis are, to some extent, interchangeable terms, and that the relief which follows the employment of a cathartic is not so much due to the mechanical effect of "unloading the bowels" as to the expulsion of substances which are slowly poisoning the system. These substances not only act in the manner just indicated, but through their irritating effect on the intestine they tend to keep up a diarrhœa which, in its onset, may have been highly conservative. From these facts may be explained the curative effect of a purge in the early stages of some forms of diarrhœa. When, however, a catarrhal condition is fairly established and occupies a considerable portion of the intestinal tract, the indications are not fully met by cathartics. Under such circumstances admirable results are often obtained by drugs whose favorable action can only be explained by intestinal antisepsis. Among such are thymol, naphthol and salicylate of bismuth. There is none better than the first mentioned, which is perfectly innocuous in large doses and possesses an antiseptic power four times greater than that of carbolic acid. Its value as an antiseptic seems to have been more fully recognized in Italy than elsewhere, and has been endorsed by Martini, Bufalini, Testi and others. In our opinion it is, when properly administered and in suitable doses, *facile princeps* among intestinal antiseptics. Salicylate of bismuth is also an admirable remedy of this sort, and is the one most approved by Dujardin-Beaumetz in the article mentioned. He usually administers it in capsules in combination with magnesia, sodium bicarbonate, prepared chalk, phosphate of lime, beta-naphthol, or charcoal.

It is not for want of suitable drugs that intestinal

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antisepsis is not more systematically carried out. The difficulty is that the indications for their employment are not generally recognized. Systematic therapeutics of any description is the outcome of systematic diagnosis, and the latter, so far as gastro-intestinal affections are concerned, is of very recent date.

There are, as Dujardin-Beaumetz points out, at least three distinct varieties of auto-intoxication proceeding from the gastro-intestinal tract. First, there are the various symptoms, too numerous to be here detailed, dependent upon habitual constipation. Secondly, a more acute condition, of which the chief symptoms are a coated tongue, loss of appetite, and sometimes fever. This is the *embarras gastrique* of the French and is caused by the ingestion of improper food, or of "*toxines*" contained in the atmosphere. The latter statement is based on the fact that the symptoms referred to often arise after a prolonged stay in a poorly ventilated and overcrowded apartment, or in a dissecting-room. The third variety is accompanied with vomiting, and is generally known in this country as acute indigestion. It is significant of more acute poisoning or of a more susceptible organism, and consequently is more frequently observed in children.

The treatment of these different forms of poisoning, whether it be exclusively dietetic or partly medicinal, is fundamentally antiseptic, and the general recognition of this fact will alone serve to bring into general use a line of treatment which is now habitually followed by a minority.

REVIEWS.

THE PULSE. By W. H. BROADBENT, M.D. Illustrated with fifty-nine sphygmographic tracings. 12mo., pp. 312. Philadelphia: Lea Brothers & Co.

THE most striking features of this compact little book, which embodies, with additions, the Croonian Lectures for 1887, are the thoroughly practical manner in which the author treats his subject and the unusual ability he has shown in making every page interesting.

Opening with a brief historical sketch, chapters follow upon the mechanism of the pulse, the proper mode of feeling the pulse, heart-sounds in relation to the pulse, abnormalities, and the pulse in various conditions of disease.

Though the book is profusely illustrated with pulse-tracings, Dr. Broadbent writes that in much of the recent teaching on the pulse and circulation, "the constant reference to the sphygmograph has been an obstacle to the application of the newly obtained knowledge to clinical work, and especially to everyday practice," and, therefore, the variations in the character of the pulse as felt by the finger receive here the first consideration. It must not be imagined from this that he underrates the value of the sphygmograph, for elsewhere he states that it has been of immense service to him.

The chapter on the pulse in fevers is particularly instructive, and should be carefully studied by those practitioners, of which there are not a few, who are guided in their prognosis and treatment chiefly by the temperature. Indeed, the whole volume is worthy of being most carefully read from beginning to end, for it is a masterly study of an important and too much neglected subject.

HOW TO EXAMINE FOR LIFE INSURANCE. By JOHN M. KEATING, M.D., President of the Association of Life Insurance Directors, etc. 8vo., pp. 211. Philadelphia: 1890.

THIS is by far the most useful book which has yet appeared on insurance examination, a subject of growing interest and importance.

Examining a candidate for insurance might, at first thought, seem to differ only slightly from much of a practitioner's routine work, but, under ordinary circumstances, when a man consults a physician he has no desire to conceal facts, while an applicant for insurance may have symptoms and weak points in his family and personal history, from which he endeavors by many means to draw the physician's attention. It is just this that makes tact and penetration on the part of the examiner of great importance. Dr. Keating in this manual offers many valuable suggestions which will be of assistance in getting at facts and "drawing out" the applicant.

Methods of physical diagnosis are also well described and illustrated by plates of the regional anatomy of the thorax.

Excellent directions for urine testing are given; heat and nitric acid being considered the most satisfactory for albumin, and fresh, carefully prepared Fehling's solution the most generally useful for sugar. With reference to transient albuminuria, Dr. Keating believes that the presence of albumin, even when not associated with other signs of disease, "renders the applicant, for the time being, uninsurable."

Not the least valuable portion of the volume is Part II., which consists of instructions issued to their examining physicians by twenty-four representative companies of this country. As the proofs of these instructions were corrected by the directors of the companies, they form the latest instructions obtainable. If for these alone, the book should be at the right hand of every physician interested in this special branch of medical science.

SOCIETY PROCEEDINGS.

FIRST ANNUAL MEETING OF THE FRENCH SOCIETY OF DERMATOLOGY AND SYPHILOGRAPHY.

Held at Paris, April 10, 1890.

PROFESSOR HARDY, of the Paris Faculty of Medicine, was elected President, after which the first paper was read by DR. HALLOPEAU, on

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AN INFANTILE BULLOUS DERMATOSIS WITH INDELIBLE CICATRICES, EPIDERMIC CYSTS, AND BUCCAL MANIFESTATIONS.

This form of dermatosis, according to the author, differs in its clinical manifestations, especially in the cicatrices, from other forms. It is sometimes generalized, as was proven by cicatrices over the entire body in one case, in which it is still in active process in the mouth and on the extremities. Bullæ are observed, with citron-colored contents, which sometimes become purulent or hæmorrhagic. These bullæ begin without the slightest pain, pruritus, or febrile manifestation. The old cicatrices are confluent on the trunk, forehead, and sometimes on the extremities. The cause of this eruption is probably due to ptomaines, which are eliminated by the cutaneous glands, as the bullæ are found in situations where toxic eruptions are usually manifested. This bullous dermatosis is not confounded with the one described by Duhring and Blocq. It differs by the absence of painful sensation or pruritus. The influence of external violence in the causation of the disease, the cicatrices and the epidermic cysts, all point to a new disease.

DR. MAURIAC then read a paper on

LINGUAL HEMIATROPHY OF SYPHILITIC ORIGIN.

This he observed in a man, forty years of age, who contracted syphilis at the age of twenty-eight, and then had lesions of the pharynx and tongue, which were thought to be an ordinary syphilitic angina.

Fourteen years later the patient complained of sudden inability to pronounce certain words; next came trembling of the right hand and paralysis of that side.

When first seen by Dr. Mauriac the tongue was already asymmetrical and atrophied on the right side, with marked disturbance in the sensation. Under treatment the patient greatly improved, but the tongue remained atrophied. Soon after this the right third cranial nerve became paralyzed.

The cause of these symptoms is probably a syphiloma at the base of the brain, involving the origin of the hypoglossal and oculo-motor nerves.

DR. MOREL-LAVALLÈE presented a case which excited a discussion, on

THE DIFFICULTIES IN THE DIAGNOSIS OF TRUE CHANCRE.

In certain rare cases the syphilitic chancre has been known not to produce any glandular involvement at all, and this is especially observed in cases of gangrenous or phagedenic chancre; moreover, induration of the primary sore may be absent, especially in women, but very rarely are both of these capital symptoms absent.

This Dr. Morel-Lavalleé has observed in a man forty years of age. In this case the chancre developed in two periods, the induration developing under the cicatrix. The secondary symptoms appeared at the usual time, but, without any discoverable glandular enlargement in any region of the body.

Professor Fournier has also observed a few of these exceptional cases, amongst them a patient who presented a superficial erosion, with a very slight induration, but no glandular enlargement; cicatrization took place rapidly. A few days later the cicatrix opened again; marked induration developed, and then the secondary symptoms occurred.

Dr. Mauriac has also seen cases in which the early glandular enlargement could not be found, but later, when the induration manifested itself, glandular enlargement was present.

PROFESSOR FOURNIER then reported

A CASE OF SYPHILIDE OF THE LIP SIMULATING ERYTHEMATOUS LUPUS.

Three years ago he saw on a young woman a papulo-erythematous lesion, occupying three-fourths of the lower lip. This red plaque, somewhat elevated, with well-defined contours in front, much less so behind, was smooth and absolutely painless. This was present for eight or nine months without symptoms of syphilis. The diagnosis of erythematous lupus was made, but later an ophthalmia occurred, which Dr. Abadie recognized as parenchymatous keratitis, complicated by iritis, and which he declared to be of syphilitic origin. She was immediately placed upon energetic anti-syphilitic treatment and five weeks later was cured of both her ophthalmia and her so-called lupus.

Professor Fournier concludes: 1st. That there is a rare form of tertiary tubercular syphilide, analogous to Cazenove's erythematous lupus. 2d. That the appearance of such a syphilide is possible twenty-five years after a chancre and without previous manifestation.

DR. BURLUREAUX read a communication on the

REACTION OF SALIVA ON CALOMEL AS A MEANS OF DIAGNOSIS IN IODOFORM POISONING.

A soldier, twenty-two years of age, was admitted to the military hospital, for a generalized scarlatiniform eruption which had started on the left arm, three days after the application of an iodoform dressing. The temperature did not rise above 100½° F. Three days later desquamation occurred on the arm and other regions of the body. Dr. Burlureaux first suspected scarlet fever, although no angina or albuminuria was present. The diagnosis was modified, however, after testing as follows for iodoform, as recommended by Poncet, of Lyons:

1st. The patient complaining of an iodoform taste, a piece of silver money was placed in his mouth and he immediately noticed a taste of garlic.

2d. A small amount of calomel mixed with the saliva, gave a characteristic canary yellow color, due to the formation of a mercurous iodide.

This reaction is a very delicate one, a drop of a solution of potassium iodide (1 : 4000) is sufficient, if placed on calomel, to bring out the yellow color. The patient presented these signs as long as the eruption persisted, and they disappeared progressively during the stage of desquamation.

DR. BALZER read a paper on a

CASE OF VACCINIA COMPLICATED BY GANGRENE DURING THE EARLY STAGE OF SYPHILIS.

It was observed in a woman, twenty-three years of age, who came to the hospital suffering from secondary syphilis and gonorrhœa. She was placed under energetic treatment, during which she was vaccinated. Only one inoculation "took," which, however, soon became black and extended until it involved an area the size of a silver

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dollar, limited by an inflammatory induration. Notwithstanding antiseptic local treatment with iodoform, salol, etc., it was only when large doses of potassium iodide (ninety grains in the twenty-four hours) were given that the eschar separated.

A paper on

ERUPTIONS DUE TO URIC ACID INTOXICATION,

was then read by DR. QUINQUAUD, who found that when uric acid is introduced into rabbits or guinea-pigs, no eruption is produced. If, however, the same is done with dogs, eruptions of vesicles, papules, or pustules occur, and are disseminated here and there on the skin with no regularity.

He has given from four to eight grains of uric acid in the twenty-four hours to men, and observed that the most common lesion was a furuncle; small papules becoming crater-like after removal of the crust, were also observed, and more rarely erythematous spots, but never the cardinal symptoms of eczema or of any other known dermatosis.

PROFESSOR FOURNIER then read a paper entitled

INFANTILE ECTHYMA SIMULATING A SYPHILITIC CHANCRE.

This disease was seen in the gluteal region of a child, who had several other sores of an ecthymatous character, and resembling syphilitic chancres, but in the groin only very small ganglia could be found. On the inferior extremities were a few small discrete folliculites, some of which became exactly like the pseudo-chancres.

DR. DU CASTEL followed with a paper on

ATYPICAL SYPHILITIC CHANCRES,

in which he said, chancres which do not correspond to the classical type are by no means rare. M. Vidal demonstrated, in 1872, that syphilitic chancres could present themselves in the form of a soft chancre, and other varieties have been described. The variety to which Dr. Du Castle wished to call attention, might be called "multiple syphilitic chancres." The following are the chief characteristics: Multiplicity of sores; successive development taking place on different days, and in a methodical order; severe pain; small size of the lesions, which are about one-third of an inch in diameter; tendency to become deeper than ordinary chancres and to develop an indurated ring; slight sub-chancrous induration, and but little induration of the neighboring glands.

M. Mauriac said that he also had observed multiple syphilitic chancres. He has seen a patient with a chancre on the chin, another on the lip, and seven or eight on the genital organs; they did not appear simultaneously, but within a space of time varying from ten to fifteen days.

DR. DE BEURMANN then presented three wet-nurses suffering from

MAMMARY CHANCRES,

acquired from foundlings.

Professor Fournier said, that under no pretext should unknown children be given to a wet-nurse; they should be artificially fed. He gave the following example of contagion which occurred in the practice of Dr. Jacquet: A child of a few months was suffering from infantile diarrhœa; no specific manifestation could be found, and the child was confided to a wet-nurse. A few days later the child died in consequence of the diarrhœa, and on post-mortem examination, gummata of the liver were discovered. A careful examination of the buccal cavity showed that nothing but a very light fissure of the inferior lip existed. Two gray slightly squamous spots were found near the right knee.

DR. QUINQUAUD followed with a paper on the

TREATMENT OF SYPHILIS BY CALOMEL PLASTER,

a method which this author uses to avoid the inconveniences of the other preparations of mercury. The formula recommended is:

Diachylon plaster	300 parts.
Vaporized calomel	100 "
Castor oil	30 "

made into a plaster.

The manner of using it is as follows: First thoroughly wash the surface of the skin with soap and water, then place a three-inch square of the plaster on the chosen spot. The plaster is kept in position for a week, then left off for a week, and then again put on for a week, and so on. This author has found that mercury is present in the urine during this treatment. In using a plaster not larger than that above-mentioned, there is no danger of salivation.

DR. ROLLET then read a paper entitled

THE PROBABLE NON-SPECIFIC CHARACTER OF THE GONOCOCCUS,

in which he said that studies had been made by M. Eraud, of Lyon, who arrives at the following conclusions: There exists in the normal urethral canal of man a microbe, the staphylococcus urethralis, which is capable of producing urethritis. This microbe has the same morphological characters in the newborn child and adult, and presents the same character as the microbe found in orchitis, blennorrhagia, and prostatitis; hence, we can arrive at the probable conclusion that these microbes are one and the same.

DR. ARNOZAN read a communication on the

TREATMENT OF EPITHELIOMATA ARISING IN THE SEBACEOUS GLANDS BY APPLICATIONS OF ACETIC ACID.

He has used acetic acid pure, and also diluted one-half or two-thirds, in superficial epitheliomata with great success. He has so far treated eight cases, all with satisfactory results, obtaining soft and very small cicatrices.

CORRESPONDENCE.

VIENNA.

The Treatment of Tubercular Abscesses. The German Congress for Internal Medicine.

To the Editor of THE MEDICAL NEWS,

SIR: The Easter vacation interferes with medical work in Vienna very much—the professors and assistants take vacations and the American student is puzzled to put in his time advantageously. Now, however, work has again begun.

There have been two sad accidents. One of Professor Albert's operating assistants, a young surgeon of con-

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siderable talent, had examined a case of smallpox that appeared in the dispensary. A few days afterward he was taken ill with hæmorrhagic variola, and, although he had been vaccinated and all known remedies were used, he fell a victim to the disease. Within a week of this death, Docent Paltauf, assistant to the professor of medical jurisprudence, cut his hand while making a post-mortem, and in consequence had a severe attack of septicæmia. His place was filled temporarily by Dr. Handlirsch, and before Paltauf recovered this substitute had received a post-mortem wound, from which he died three days later. At least a dozen autopsies are made every morning in the general hospital, yet these are the only cases of blood-poisoning that have occurred for years.

Billroth has again made a great impression on the surgical world by an article published a few days ago. Tuberculous abscesses have long been studied and treated unsuccessfully. For the past four years Billroth has been steadily experimenting with different means of treatment till now he has reached a conclusion, which, as it is based on his enormous clinical experience, cannot fail to excite great interest. Contrary to the usual method, he cuts down upon the abscess and lays it widely open; draws off the pus and cleans out the remotest corners; follows up any fistula to its point of origin, and scrapes the lining surface of the abscess until all the so-called membrane is removed. Sometimes it is necessary to open a thigh from the popliteal space to the tuberosity, but thoroughness in regard to the fistulæ is absolutely necessary. He then waits until the bleeding has ceased, of course removing the Esmarch, if one has been used, and when the wound is glazed by the serum he fills the abscess cavity with an emulsion of 10 parts of iodoform in 100 parts of glycerin. The edges of the wound are then brought together and stitched very carefully so as to close the cavity perfectly and *without* an opening for drainage. Thoroughly antiseptic dressings are applied and left on for several days. In most cases he gets primary union and the abscess heals, the iodoform emulsion being slowly absorbed as granulation goes on. Sometimes when antisepsis has been imperfect sloughing results, but even then the abscess generally heals from the bottom without recurrence. In a few cases the results were not good, but in these the operation was not sufficiently thorough, as some of the recesses were left untouched. Strange as it may seem, iodoform poisoning has been noticed in only a few cases, and in a very slight degree.

Billroth has used the same method in tuberculous caries with equally good results, and now asks the profession to try the method. How does the iodoform act? It is known that iodoform is not a perfect antiseptic, but a most powerful stimulant of granulation. To use Billroth's words, "Iodoform exerts a great formative influence on the smaller vessels, and these soon begin to grow out and multiply in an extraordinary manner by constant production of offshoots and capillary loops. This energetic growth of the living tissue seems to rob the microbes of their nourishment; in the struggle for existence they succumb to the growing cells of the vessel walls." As granulations secrete pus only when diseased, drainage is unnecessary. When the method is used in caries the action is the same, the osteophytes in this case being stimulated.

The German physicians who devote themselves to internal medicine only, as contradistinguished from specialism, have organized a congress to which the best men in Germany, Austria, and Switzerland come annually, and also many from Italy, Russia and France. They meet every second year in Wiesbaden and the alternate years in Berlin, Leipsic, Munich, and Vienna, in rotation. This year Vienna was the place, and among the several hundred present were Leyden, Senator, Gerhardt, of Berlin, Ziemssen, His, Ziegler, Adamkiewicz, Erb, Romberg, Immerman, and many more of Europe's greatest medical authorities. There is probably no other society that has so many distinguished men among its members as this one, for membership is restricted, it seems, to the famous. Hence, of course, we looked to them with great interest. They met with Nothnagel as president, and Leyden and Curschman as vice-presidents. Every year two subjects of the greatest general interest are selected as topics for discussion at the next annual meeting, two members being appointed to open the discussion. This year the treatment of empyema and of chronic nephritis had been chosen. Immerman, of Basel, and Schede, of Hamburg, opened the discussion and were followed by Eberth, Leyden, Ziemssen, Billroth, Fürbringer, and Nothnagel. The general opinion of the society may be summed up as follows: In every case of fluid in the pleural cavity, if it becomes chronic, exploratory puncture is absolutely necessary. As soon as bacteriological examination shows the presence of pus-forming agents or pus, the fluid must be removed at once by operation. In early cases simple puncture and a drainage-tube may suffice, but resection of ribs is indicated when there is much atelectasis, in order that the size of the pleural cavity may be diminished and filled up by granulation. Billroth believes that after granulations form between the costal and pulmonary pleura their contraction may increase the capacity of the atelectatic lung. When resection is performed the ribs must be removed without opening the pleural cavity—this is easy if the bone be loosened from its periosteum. Then puncture is made and the fluid drained away under antiseptic precautions, so that microbes are excluded from the cavity. The results of resection seem to be a little better than those from simple drainage—in children the results are remarkably good from both methods. Even in cases of phthisis, operation has been followed by excellent results. After resection, massage and gymnastics are often of great advantage; approximate symmetry can be obtained even when three inches of rib have been removed, as shown by four cases.

Unna read a good paper on the physiology of the skin. The results of his experiments seem to show that covering the skin has considerable effect on temperature. A varnish of gelatin increases the transudation of fluids and has a marked effect in reducing fever, and Unna advises a trial of this in high temperature, as well as in nephritis, where we desire an excessive action of the skin. It sounds paradoxical to apply glue to the entire body for a cooling effect, but he claims that the gelatin absorbs so much water from the cutis that the function of the skin is not diminished, but rather is increased. Senator tried a similar method some years ago, but the results were not especially brilliant.

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Mosler read a paper on pemphigus which was received with interest, and elicited replies from Kaposi, Neuman, and Schwimmer. Mosler has examined the fluid of the pemphigus vesicles and in every case where the proper precautions were used to get the pure fluid, no bacteria could be found. Inoculations and cultures with the fluid are also impossible. He, therefore, concludes, and Kaposi and Neuman agree with him, that pemphigus is not caused by microörganisms, but is rather a neurosis or an angio-neurosis. The clinical history lends additional evidence to this theory, and the etiology is so peculiar that no other explanation suffices. Pemphigus is not very rare in Vienna—of the 50,000 cases of skin diseases Kaposi has seen in twenty-three years, there were 210 cases of pemphigus, with a mortality of about 90 per cent. Kaposi and Neuman have had no definite success in treatment; Weber, of Halle, reports a cure from baths of permanganate of potassium, and arsenic internally.

One of the best papers read was that by Professor Adamkiewicz, of Krakow. From a number of cases in which he made thorough microscopic examination, he has established the truth of Leyden's theory that myelitis is not a result of compression of the cord—in fact, in his cases, where the pressure was greatest, there was no myelitis, the process being most intense at those places where there was no compression. He stated, further, that the nutrition of the cord is carried on by two sets of vessels, one of which entering at the anterior fissure supplies the centre of the cord, while the other entering the cord at many points on the circumference supplies the peripheral portion. In cases of anterior poliomyelitis he has found thickening of the vessels which supply the anterior horns and also infarctions in the end capillaries. In lateral sclerosis he has also found infarctions in the crossed pyramidal tracts, and on these discoveries he bases a theory of systemic origin of diseases of the cord. He thinks the degeneration of the nerve-fibres and the sclerosis are due to the microscopic infarctions which disturb the nutrition, these infarctions being caused by disturbances in the blood, probably from microörganisms and the accompanying changes in the vessel-walls. He claims to have seen the infarctions, and also in every case the concomitant changes in the endothelium of the affected vessels. Thus he builds up an ingenious theory for something hitherto unexplained.

Ziemssen, of Munich, showed two good specimens of "bullet thrombi" in the right ventricle. These thrombi are not connected with the heart-wall or valves, but lie perfectly loose in the cavity, which they nearly fill, yet they interfere but slightly with the cardiac function. They were each an inch in diameter, perfectly round and smooth. There are but six cases on record, and diagnosis *intra-vitam* is not possible. Ziemssen is a medium-sized man, rather slim, nearly bald, and what hair he has is snow-white. He has a small white moustache, waxed and twisted at the ends in military style. His eyes are small but bright and piercing, and the expression of his face is highly intellectual, yet full of kindness and even mirth. Leyden is of Herculean frame, has a very closely trimmed gray beard, heavy features, somewhat unsymmetrical, for the left side of his face seems a little contracted. When thinking there is nothing exceptional in his appearance, but when speaking or interested his features seem aglow with the mighty intellect that moves them. A few weeks ago he celebrated the twenty-fifth anniversary of his first lecture as clinical teacher, and all his former assistants assembled to do him honor. Among them were five professors and more than twenty clinical teachers.

But to return to my subject: the most important feature of the Congress was the discussion on the treatment of chronic nephritis. Senator and Ziemssen opened the discussion, which represented the latest ideas of the highest German authorities on the subject. They divided chronic nephritis into two classes, parenchymatous and interstitial. In the former the Malpighian bodies are chiefly the seat of disease, and the trouble comes from an insufficient excretion of water, and a waste of albumin, causing dropsy and weakness; while uræmic symptoms develop much later. The interstitial form affects the urea-secreting portion of the kidney—there is hypertrophy of the connective tissue, and consequently a contraction of the vessels. The blood is not perfectly purified, and so there are disturbances in the general capillary circulation which results in cardiac hypertrophy, while the loss of albumin is slight, and dropsy is not a marked feature. Of course, in both forms we have cardiac hypertrophy from the same cause, but it is more marked in the interstitial form.

If in the treatment we could stimulate the Malpighian bodies to a more active secretion of fluids, and at the same time prevent the loss of albumin, we would have an ideal method. A mild diuretic and food containing a minimum of albumin should be given. Milk contains considerable water and hence is a mild diuretic, and experiments have proven that of all foods which keep the body in good repair milk contains the least albumin; hence in this disease it is the nearest to a perfect diet and medicine combined. On these principles the exclusive milk diet is the best treatment. Empiricism has also proven the value of a milk diet. In interstitial nephritis, of course, there is much similarity to the parenchymatous form as regards pathology, and in this the milk diet is also of the greatest value. There is an additional element, however, in the more marked retention of urea and cardiac hypertrophy, in the slighter albuminuria, and in the absence of dropsy. The greater work thrown on the heart makes a cardiac stimulant necessary here and digitalis is our most powerful help, though strophanthus is also useful.

Ziemssen warned against much medication, although the temptations are very great. He considered the main lines of therapy to be rest and proper diet, and every case of chronic nephritis should be kept as nearly at absolute rest as possible. The diet should be, as far as possible, milk alone; but it must be varied so that the patient will not become disgusted with the treatment and give up the only reliable method we have. Besides the dietetic and rest treatment, diuretics, and diaphoretics may assist, but only the second is of special value. The hot-air bath is the best method of producing diaphoresis, next to it the steam bath and hot-water bath, and when complications contraindicate these, pilocarpine is of considerable utility. When the œdema is excessive, Ziemssen punctures the swollen limbs; making four punctures every day, one in each leg and one in

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each thigh. Small canulas, like those of a hypodermic syringe but perforated at the sides, are placed deep in the tissues, and retained by dressings so arranged that the fluid can escape. The tubes are left *in situ* for twelve hours. He has drawn off as much as twenty-four pints of fluid in two days, and that without any untoward symptoms. Of diuretics the potassium salts are the best, though calomel given in small doses is also good. He disapproves of drastics. In interstitial nephritis at the first indication of cardiac weakness digitalis should be given, and ice-bags to the cardiac region are sometimes of great help. When uræmia comes on the battle is generally lost, so we must prevent it by the prophylactic treatment.

It seemed to be the impression that the mortality of chronic nephritis has been diminished, and a number of permanent cures were reported, and the universal consent to the methods indicated was remarkaable. The congress has now adjourned. There were Americans, Japanese, Chinese, Persians, Greeks, Turks, Russians, and French present, besides the German-speaking contingent, and a glance over the list of those attending will prove the international character of the attendance at Vienna's famous University.

NEW ORLEANS.

To the Editor of THE MEDICAL NEWS,

SIR: The medical profession here has been much interested in the investigation that has been going on at the United States Marine Hospital of New Orleans. It seems that two months ago Passed Assistant Surgeon S. T. Armstrong, who has charge of the hospital, told Passed Assistant Surgeon R. P. M. Ames, who is his assistant, to administer chloroform to a patient. Dr. Ames, who is an advocate of ether, refused to give chloroform, but said that he would give ether. Dr. Armstrong said that, as the head of the institution, he had the right to give what orders he wished, and suspended Dr. Ames, as the latter persisted in his refusal. Dr. Armstrong then wrote to Surgeon-General Hamilton and stated the particulars of the case, and his action was endorsed. Dr. Ames then filed the charges which appear below, and Surgeon-General Hamilton came to this city to investigate them. In opening the inquiry, the Surgeon-General had the charges read by the stenographer. Dr. Ames charged:

"1. That on February 26, 1890, in the operating-room, Dr. Armstrong's manner and language to me (Ames) was unbecoming an officer, a physician, and a gentleman, and this, too, in the presence of an attendant and patient.

"2. That he, unjustly and without cause, charged me on the records of the station with being guilty of gross insubordination and conduct prejudicial to good discipline.

"3 (*a*). That his endorsement on my letter of February 27th, reporting the death of a seaman in the custom-house office, in which chloroform had been given, is mendacious in so far as it refers to the facts contained in the letter.

"3 (*b*). That the statements in his letter of the 10th ultimo, charging me with being malicious and guilty of expressing unfounded libels, is equally false in every particular.

"4. That he has violated the following paragraphs of the *Revised Regulations* of 1889: (*a*) He has hospital attendants performing work in his own quarters. (*b*) He has oppressed and maltreated persons under his command, and abused patients under his care. His conduct in this particular has been brutal and inhuman, and in consequence many patients have deserted the hospital—jumping the wall to seek relief elsewhere. This condition of affairs has brought the management of the hospital into disrepute; patients object to being sent there, and the admissions, as the result of such a reputation, have greatly fallen off. (*c*) He is guilty of cursing and using abusive language to attendants and patients. (*d*) Paragraphs 276 and 282. He ordered the prescription and diet book removed on February 22d without any authority, and it has not been officially restored, notwithstanding the expression in bureau letter of March 3d in relation thereto.

"5. That his statements in his letters to the bureau of March 4th and 20th are false, in so far as he states that there is only one bedroom-set in his quarters (there are two), and that there was nothing in the hospital that could be used for aspirating purposes. There are two aspirators, and in good order. They were then in good working order, and are now.

"6. That he has violated the contract of William J. Walsh for care of horse and ambulance after the receipt of bureau letters."

The seventh section states that Surgeon Armstrong falsely certified to certain bills, etc.

Dr. Armstrong pleaded not guilty to all of the charges, and Surgeon-General Hamilton called on Dr. Ames for witnesses. The investigation, which was a public one, lasted two days, and many witnesses were examined. Surgeon-General Hamilton stated, before leaving for Washington, that no decision would be made before his return to the North.

Dr. Charles Chassaignac has been elected to the presidency of the Orleans Parish Medical Society, to succeed the late Dr. John P. Davidson.

The charitable institutions here have been so much abused by those who are able to pay a physician, that a conference is to be held by the representatives of the various institutions to take measures to remedy the evil.

Owing to the floods, there will be no meeting of the Louisiana State Medical Society this year. Their Committee on State Medicine will shortly present a petition to regulate the practice of medicine in this State, and it is hoped that a State Board of Examiners will be appointed and other measures adopted which will improve the profession.

Dr. Walter Bailey, Sr., a prominent homœopathic physician here, was run over and seriously injured on May 30th.

Dr. T. G. Richardson has gone to Washington. He resigned the position of Professor of Surgery at the Tulane University, on account of ill health, greatly to the regret of his many friends.

THE OLDEST LIVING GRADUATE OF THE UNIVERSITY OF PENNSYLVANIA.

To the Editor of THE MEDICAL NEWS,

SIR: So much has been said in the various journals about the oldest graduate of the Medical Department of

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the University of Pennsylvania, that I thought it would be interesting to collect the names of several of the oldest living graduates, as far as known to me, and send them to you. They are as follows:

Enoch Fithian, Greenwich, N. J., Class of 1816.
James Kitchen, Philadelphia, Pa., Class of 1822.
E. W. Mobberly, Virginia, Class of 1824.
John Sappington, Shire's Landing, Md., Class of 1825.
William Wetherill, Lambertville, N. J., Class of 1825.
G. R. B. Horner, U. S. A., Warrenton, Va., Class of 1826.
Walter Somerville, Mitchell's Station, Va., Class of 1826.
Lewis Rodman, Philadelphia, Pa., Class of 1827.
J. Z. Coffman, Phœnixville, Pa., Class of 1827.
Fred. Fickhardt, Bethlehem, Pa., Class of 1827.
J. H. Hicks, Faison's, N. C., Class of 1827.
Hiram Corson, Conshohocken, Pa., Class of 1828.
J. H. Blackwell, Florence, S. C., Class of 1829.

Yours, truly,

JAMES TYSON, M.D.

NEWS ITEMS.

The Volkmann Monument.—It is proposed by the colleagues and friends of the late Professor Richard von Volkmann to erect a monument to his memory in Halle, the place of his long and successful labors. Dr. John S. Billings, of Washington, D.C., is prepared to receive contributions from Americans.

The William F. Jenks Memorial Prize.—The second triennial prize of four hundred and fifty dollars, under the deed of trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on "The Symptomatology and Treatment of the Nervous Disorders Following the Acute Infectious Diseases of Infancy and Childhood."

The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with obstetrics, or the diseases of women, or the diseases of children;" and that "the Trustees under this deed for the time being, can, in their discretion, publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may, in their judgment, be sufficient for that purpose, and the essay or paper be considered by them worthy of publication. If published, the distribution of said essay shall be entirely under the control of said trustees. In case they do not publish the said essay or paper it shall be the property of the College of Physicians of Philadelphia."

The prize is open for competition to the whole world, but the essay must be the production of a single person.

The essay, which must be written in the English language, or, if in a foreign language, accompanied by an English translation, should be sent to the College of Physicians of Philadelphia, Pennsylvania, U. S. A., before January 1, 1892, addressed to Louis Starr, M.D., Chairman of the William F. Jenks Prize Committee.

Each essay must be distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right not to make an award if no essay submitted is considered worthy of the prize.

Resignation.—Dr. John Aulde has resigned his position as Demonstrator of Physical Diagnosis and Clinical Medicine in the Medico-Chirurgical College of Philadelphia.

A Summer Biological School.—A laboratory for biological study will be opened at Cold Spring Harbor, Long Island, during the coming summer. The station will be the one used in the winter season by the State Fishery Commission, and is the largest of the kind in the country. It is supplied with all the appliances suited to the study of aquatic life, both in fresh and salt water. Much attention will be devoted to the food-fishes and to the forms of vegetation upon which they subsist. The number of students during this, the first, year will be limited to twenty-five. A corps of lecturers under Professor Bashford, Dean of the College of the City of New York, has been secured from among volunteers from Harvard, Johns Hopkins, and other institutions and laboratories. The section on Natural History of the Brooklyn Institute will have the school in charge.

Dr. Brehmer's Successor.—Dr. Felix Wolff, of Hamburg, has been appointed successor to the celebrated late Dr. Brehmer in the management of the Sanitarium for Consumptives at Görbersdorf, Silesia. Dr. Wolff was for a long time chief assistant to Professor Curschmann, of Leipsic, and is eminently fitted for the post he is to fill.

Obituary.—Dr. J. B. P. Jaemary, one of the oldest practising physicians in Texas, died in Victoria on April 11th. He was born in Maysville, Kentucky, in 1811, and had practised medicine in Texas for fifty-four years. At the time of his death he was the President of the Victoria Medical Society.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 27 TO JUNE 2, 1890.

By direction of the Secretary of War, so much of Par. 2, S. O. 119, A. G. O, May 21, 1890, from this office, as relates to Robert B. Benham, Captain and Assistant Surgeon, is amended to read as follows: ROBERT B. BENHAM, *Captain and Assistant Surgeon*, will proceed from Madison Barracks, New York, to Fort Wadsworth, New York, and report in person to the commanding officer of that post for temporary duty.

LAUDERDALE, JOHN V., *Major and Surgeon* (Fort Ontario, New York).—Is hereby granted leave of absence for one month, to commence on or about June 1, 1890.—Par. 4, *S. O. 123, Headquarters Division of the Atlantic, New York City*, May 27, 1890.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVI. SATURDAY, JUNE 14, 1890. NO. 24.

ORIGINAL ARTICLES.

A METHOD OF APPLYING ANTISEPSIS IN THE TREATMENT OF RECENT ANTERIOR URETHRITIS.[1]

BY J. WILLIAM WHITE, M.D.,

PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF PENNSYLVANIA; SURGEON TO THE UNIVERSITY AND GERMAN HOSPITALS.

THE application of the principle of antisepsis to the treatment of urethritis may be made for one of two reasons, and in one of two ways. The drugs employed may be given on account of their supposed action upon either the microbes of suppuration, or upon the alleged specific microbe of gonorrhœa—the gonococcus of Neisser.

They may be used locally, or may be administered by the mouth, although, even when given in that way, their action is largely a local one.

As to the *reason* for their employment, in the light of modern pathology it is not necessary to believe in an invariable and essential relation between the gonococcus and gonorrhœa to see a clear indication for the use of germicidal agents. The successful treatment of suppuration anywhere demands the employment of some such agent, though it must be admitted that when the pus is furnished by a mucous surface the difficulties of treatment—*i. e.*, of successful antisepsis—are greater than under most other circumstances; and it must likewise be admitted that those difficulties are much increased when the suppurative process is established in a canal like the male urethra, the anatomical peculiarities of which favor so markedly microbic growth or multiplication.

Its length and narrowness; the approximation of its walls during the intervals of urination; the delicate and actively absorbent mucous membrane which lines it; the passage through it at short intervals of an animal fluid of more or less irritant properties, and prone to decomposition; the opportunities offered by the various follicles and lacunæ, and by the curves and dilatations of the normal canal for the retention of any foreign matter, all render the problem of antisepsis a complicated and a difficult one.

While, as I have said, the employment of antiseptics in urethritis, or a belief in their efficacy does not necessitate a corresponding belief in the gonococcus as the sole cause of gonorrhœa, yet a consideration of the rationale of such treatment undoubtedly involves an inquiry into the natural history of that microbe, which is certainly present, whether as cause or effect, in the large majority of cases of acute gonorrhœa. Unfortunately, the results of culture experiments and of the influence of parasiticides upon gonococci external to the body do not afford satisfactory evidence as to the effect of the same agents when applied to the same germs embedded in the depths of an inflamed urethral mucous membrane. Bumm's investigations appear to show that, at first, they multiply by preference in the papillary layer, and find their way to the surface only during the latter part of the purulent, and during the subsiding (or muco-purulent) stage, and Finger uses this as a theoretical argument against the early administration of either astringents or antiseptics. Enough is known, however, to enable us to state with certainty that the agents which are effectual against the microbes of suppuration are not equally destructive of the gonococci, several competent observers having noted the fact that antiseptic solutions, when applied to gonorrhœal secretions outside of the body, have seemed to exert but little effect upon the gonococcus even when strong enough to destroy pus-cells almost immediately. The study of the question, as a problem in bacteriology, is not, however, the object of this paper.

The definite etiological relation between the gonococcus and gonorrhœa, although asserted by a large and an increasing number of respectable authorities, cannot yet be considered as absolutely demonstrated. The statement that the disease has been produced by inoculation of pure cultures of the gonococcus (the only scientific and demonstrative proof of such relation) rests, so far as I know, upon experiments which are numerically insufficient to entitle it to an unhesitating acceptance, though I am willing to admit that, after having always taught and contended for the non-specificity of gonorrhœa, I feel the weight of evidence to be gradually accumulating upon the other side of the question.

Clinically, however, we may now assume that, in the majority of cases of acute urethritis, gonococci, the microbes of suppuration, and other bacteria will be found intermingled, and that successful treatment by germicidal agents will involve the destruction of all the different varieties present. Dismissing, therefore, any further theoretical considerations, we may inquire what drugs, if any, belonging to the class of antiseptics have a curative effect upon the

[1] Read before the American Association of Andrology and Syphilology, at Altoona, June 4, 1890.

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essential symptom of urethritis—the blennorrhœa; restricting our inquiry to those cases in which the disease is comparatively acute, and in which it is limited to the pendulous urethra; in other words, to the ordinary cases of uncomplicated gonorrhœa which present themselves in one's office for treatment during the first few days after its appearance. The symptoms, pathology, complications, and treatment of the so-called "posterior" urethritis are entirely different, and need not be discussed in this relation. Considering topical remedies first, and excluding a large number which have little or no claim to occupy time or attention, we may divide the remainder into three classes:

1. Those which when strong enough to exert a sufficient germicidal action, are locally so irritating as to be harmful or unbearable. This class includes nitrate of silver, carbolic acid, chloride of zinc, iodine, chloral, potassium permanganate, salicylic acid, and creasote, all of which have been faithfully tried in many cases and by competent surgeons, the concurrent testimony being, that when used in sufficient strength to sterilize the discharges they produce an amount of local irritation and swelling, ardor urinæ, chordee, and even exceptionally urethral ulceration, that far outweighs any advantage to be derived from their antiseptic properties.

2. Those which are such feeble antiseptic agents that they cannot be depended upon to destroy all the bacteria found in urethral discharges. Among these may be mentioned resorcin, thallin, quinine, the sulphate and acetate of zinc, lanolin, sulphur waters, tannin, alum, hydronaphthol, and cadmium sulphate. The clinical and the experimental evidence coincide as to most of these drugs. Each has had its more or less enthusiastic advocates, but when given a wider trial has been found disappointing, while bacteriologists have shown that the germicidal action was either limited to a very few varieties of bacteria, or was slow and uncertain.

3. The third class includes a number of agents which, while open to the same objection of too feeble or too limited antiseptic action, have the additional drawback of insolubility in ordinary media and of occasionally becoming mechanically irritating from the formation of concretions. Among these are iodoform, calomel, bismuth subnitrate, oxide of zinc, and other insoluble powders.

It must not be supposed that this list is intended to be even approximately complete. It might be increased literally a hundredfold, and nothing could better demonstrate the blind absurdity of empirical methods than the dozens of ridiculous formulæ and the hundreds of useless drugs which have from time to time been recommended for use in the various forms of urethritis.

So far, however, as they are antiseptics they would be found in one or the other of the above classes.

There are certain agents which I have purposely omitted from this classification, but which, as ordinarily employed, might have been included with considerable propriety. These are corrosive sublimate, the sulpho-carbolate of zinc, boric acid, peroxide of hydrogen, and the salicylate of bismuth—the five drugs which in various combinations are, in my opinion, of the most practical value in attempting by topical treatment to secure asepsis in an inflamed urethra. Corrosive sublimate was used in the last century and in the early part of this century by Musitanus, Malow, Gardave, Benjamin Bell, John Hunter, Gutauer, and Swediaur. It then fell into disuse but was revived again in 1846 by Mueller von Berneck and employed spasmodically and unsystematically by a few surgeons until Neisser's discovery of the gonococcus gave the drug an extraordinary vogue. The records of its effects in different hands have thus far been most contradictory. While on the one side we have Leistikow, Lewin, Eichsbaum, Grandin, Chameron, Paul, Louissot, Keyser, and Macrae advocating its employment, on the other we have Diday, Wyeth, Dujardin-Beaumetz, Lewis, Finger, Auspitz, Bardezzi, Du Castel, Dreyfous, and Fournier who either recognize no advantage from its use or who record positive unfavorable experiences. Its use by the method of irrigation in solutions varying in strength from 1 in 60,000 to 1 in 10,000 has been popularized by the excellent work of Curtis, Halstead, Vanderpoel and Brewer, and their published results seem to warrant its further trial, especially in hospital and dispensary practice.

The method of deep irrigation or retrojection involving the use of a catheter has always been unsatisfactory in my hands in private practice. It involves too much expenditure of time on the part of both patient and surgeon, and in a genuine acute inflammatory urethritis is certainly objectionable on account of the irritation produced by even the softest instrument. Keyes and others have met with cases of cystitis, prostatic abscess, epididymitis and other complications which seemed to have been produced by this treatment used early in attacks of urethritis. Palmer has called attention to its inapplicability to private practice, and I can add my testimony to theirs, though I am aware that in forty-six cases treated by retrojection Dr. Brewer claims to have met with no such difficulty.

I found it much more satisfactory to order frequent injections from a large syringe with moderate force, using the strongest solutions that could be given without causing pain and preventing the fluid from passing too deeply by instructing the patient to sit upon a folded towel during injection so as to

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occlude the membranous urethra. My results were, however, disappointing so long as I used this drug alone. In a certain proportion of cases, by no means a small one, any solution, however weak, seemed to irritate, giving rise not so much to pain at the time of injection as to subsequent increased ardor urinæ. In others it was well borne but had no influence upon the discharge; in others it aggravated it and those in which it caused very decided improvement were in the small minority. Rigid dietetic and hygienic directions were always given at the same time and were, as a rule, fairly well followed, as most of the patients were of good social position.

Boric acid recommended long ago by Hyndman, of Cincinnati, tried by Chameron, Du Castel and others with unfavorable results, was used by me in a considerable number of cases six or eight years ago and dropped on account of general negative results. It has been shown to have little effect on the gonococcus but it is quite unirritating and can be used in sufficiently strong solution to destroy many of the weaker forms of vegetable life. Its germicidal action is slow but continuous. I shall allude in a moment to its internal employment. I certainly improved my results when I added it to the bichloride injection in the proportion of fifteen to thirty grains to the ounce. I felt, however, the additional need of an astringent, and for a long time employed the sulphate of zinc, for which I have recently substituted the sulpho-carbolate (two to ten grains to the ounce of the mixture). By using a ten to fifteen per cent. solution of peroxide of hydrogen as a menstruum, I then found that I had a formula which, both clinically and experimentally, showed excellent antiseptic qualities. In exceptional cases of profuse catarrhal secretion the addition of bismuth salicylate was also of advantage.

The rigid application of the antiseptic principle by means of these drugs used in this way undoubtedly brought about a distinct gain in my results; complications were fewer and the time required for cure was shorter than when I was content with employing sedatives and astringents and endeavoring to meet symptomatic indications, but there was still much to be desired.

In quite a large proportion of cases it was not possible to use this injection, or any modification of it, for some days after the disease had reached its height. I was in the habit, under these circumstances of giving boric acid internally to sterilize the urine, combining with it potassium bromide and belladonna in a solution of potassium citrate.[1] This mixture never had any very marked effect upon the amount of discharge though it constantly moderated the ardor urinæ, chordee, and vesical tenesmus of the inflammatory stage. I was also in the habit, after those symptoms began to subside, of employing one or both of the two chief "anti-blennorrhagics," cubebs and copaiba, usually in a capsule in combination with tar and pepsin. There can be little doubt that the beneficial action of these drugs as well as that of their congeners, gurjun, sandalwood, kava kava, eucalyptus, and the various terebinthinates, is chiefly due to their antiseptic powers, which not only deprive the altered and partially sterilized urine containing them of many of its harmful properties, but cause it to exert a positively curative effect upon the suppurating mucous membrane.

This statement is borne out by a number of microscopic observations upon specimens of urine before and after the administration of these drugs and by culture and inoculation experiments which will form the subject of a later publication.

This represented my routine treatment for cases of recent urethritis up to the middle of last January. My average results were certainly better than they had ever been before I made antisepsis the guiding principle of treatment, though not equal to some of those said to have been obtained by the method of irrigation, which, as I have said, I have found impracticable in private practice. My attention was then attracted by an article in the *Gazette Hebdomadaire de Médecine et de Chirurgie* (January 4 and 11, 1890), by M. Ferdinand Dreyfous, on "Antisepsis of the Urinary Organs by the Internal Administration of Remedies."

His paper contained the results of his observations in seven cases of gonorrhœa in which salol had been administered in full doses both with and without admixture with cubebs and copaiba.

Sahli (*La Semaine Médicale*, April 7, 1886) had shown that the resultants of the intestinal decomposition of salol are salicylin and carbolic acid, which are eliminated by the kidneys. He had exposed to the air for some weeks the urine of a patient under the influence of salol without the least decomposition occurring. Nencki had made the same observations. Bouchard (*Thérapeutique des Maladies Infectieuses; Antisepsie*, 1889, p. 247) had called attention to the value of the simultaneous employment of several antiseptics in internal administration. M. Dreyfous on these grounds gave salol a trial, and arrived at conclusions which were rather sweeping, considering the very limited experience on which they were

[1] Palmer has shown (American Medical Practitioner, August, 1887) the value of boric acid in sterilizing the urine, having had but one case of urethral fever in forty urethrotomies, and that occurring in a patient in whom by accident the boric acid had not been administered. The well-known effect of quinine in preventing urethral fever is probably due largely to its antiseptic action and to its elimination through the urinary apparatus. (Reginald Harrison: Letsomian Lectures, 1888.)

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based, but which, taken in conjunction with the clinical histories of his patients, made so much impression upon me that I determined to investigate the subject. I accordingly asked Mr. Llewellyn, a prominent druggist, to prepare for me and keep on hand gelatin capsules, each containing

Salol	3½ grains.
Oleoresin of cubebs . .	5 "
Para balsam of copaiba .	10 "
Pepsin	1 grain.

I began at once to prescribe them in all forms and at all stages of urethral discharge, and, after a little time, in all cases in which much urethral or vesical instrumentation was required, giving from 6 to 8 daily. I have now used, as I learn from Mr. L'ewellyn, nearly 10,000 capsules, and my case-books show that these have been prescribed in 97 cases. Throwing out of the latter the cases of urethrotomy, operations for vesical calculus, dilatation of strictures, etc. (in all of which I have come to regard it as of much value), there are left 72 cases in which the predominant symptom was urethral discharge. Of these, 19 were chronic and the results need not now be detailed, though I may say, *en passant*, that even among them in almost no instance did I fail to observe some benefit.

There remain 53 cases of recent urethritis, confined to the anterior urethra, but of all grades of severity. Of these, a distinct and unmistakable effect upon the discharge was produced in every instance but two, in which a violent indigestion prevented a thorough trial of the capsules. In 35, or about two-thirds of the whole number, the discharge almost or entirely disappeared during the first week after this treatment was begun. I have usually found, however, that it would return if treatment were withdrawn or even if the dose were greatly diminished; and although in 7 cases I depended from first to last upon the capsules and succeeded in effecting a cure in about seventeen days, in the majority of cases it was necessary to use the injection also. Since writing these notes I have seen an article by Mr. Ernest Lane (*The London Lancet*, March 22, 1890) giving his results in 50 cases of gonorrhœa, in which he used salol in doses varying from 5 to 30 grains, three times daily. An analysis of the 50 cases shows that 6 were cured, 25 showed considerable improvement, 15 were unaffected by the treatment, and in 4 the symptoms were aggravated. When he gave 20 grains three times daily and relied upon its internal administration without the assistance of injections he noticed an improvement in 20 out of 40 cases within a week, and 6 were cured completely in that time.

If I had seen Mr. Lane's paper earlier I would certainly have used larger doses of salol, and I have now ordered capsules to be made containing five and ten grains each. I am still of the opinion that the combination with cubebs and copaiba is of advantage, though I have tried salol alone in but a very few cases. I find it difficult to estimate with any accuracy or precision the lessening of the time required for a cure which has followed the systematic introduction into my practice of these antiseptic methods. I have already described the successive changes which I made in the topical remedy—the injection—each of which was an improvement, but I certainly noticed a much more marked and unmistakable advantage as a result of the employment of the capsules. In general terms I should say that these changes in my plan of treatment of acute urethritis have diminished the average duration of such cases by from one-third to one-half, and have even more decidedly reduced the discomfort and suffering, and lessened the frequency of complications.

In not one case in the whole number did gonorrhœal rheumatism (urethral synovitis) develop, and in three cases it was especially noteworthy that although they had never before been free from joint trouble during an attack of gonorrhœa, they had absolutely no threatening of it under this plan of treatment.

I have not attempted to give the average time of treatment in days for the reason that such statistics are worse than useless, they are misleading, unless they are based upon very large numbers of observations. A few days' difference in the time of beginning treatment, giving more or less opportunity for bacterial growth and for penetration into the deeper mucous layers, will necessarily make a still greater difference in the effectiveness of treatment and the rapidity of cure. So, too, cases of the kind upon which this paper is based, persons of fairly good position and intelligence, should not be classed with the ordinary applicant for dispensary or hospital treatment. I have, therefore, confined myself to this somewhat sketchy statement of my experience, which is, as yet, not large enough to warrant more definite assertions. It, however, taken with the general testimony upon the subject, justifies, in my opinion, the following conclusions, some of which are closely parallel with those M. Dreyfous had reached after even less extended observation:

1. The microscopical and experimental evidence in favor of the bacterial origin of gonorrhœa is confirmed by clinical and therapeutical experience.

2. The results of antiseptic treatment have not been so uniformly successful as would be expected, on account of—*a*, the anatomical and physiological peculiarities of the male urethra; *b*, the difficulty of applying sufficiently energetic local antisepsis; *c*,

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the necessarily intermittent character of such applications, and *d*, the failure to combine with the topical treatment appropriate internal medication.

3. No one antiseptic agent can be depended upon, in the strength at which it can be borne by the inflamed urethral mucous membrane, completely to sterilize the discharges and the suppurating surfaces. A judicious combination of several antiseptics, if not essential to success, is at least of considerable value.

4. The internal administration of salol in conjunction with copaiba and cubebs renders the urine aseptic and probably antiseptic, so that it acts as an exceptionally thorough and efficient antiseptic injection, shortening the duration of the disease and diminishing the frequency and severity of the complications.

5. The production of urinary asepsis by internal medication is of considerable value not only in the inflammatory affections of the genito-urinary tract, but in the preparation of the patient for operation upon those organs and in the after-treatment.

THE EXAMINATION OF DRINKING-WATER WITH SPECIAL REFERENCE TO ITS RELATION TO TYPHOID FEVER.

BY VICTOR C. VAUGHAN, M.D,
PROFESSOR OF HYGIENE AND PHYSIOLOGICAL CHEMISTRY IN THE UNIVERSITY OF MICHIGAN.

Introduction.—When the Michigan State Board of Health asked the Regents of the University of Michigan to build and equip a laboratory of hygiene, the objects of the laboratory were stated to be as follows:

1st. Original investigation into the causation of disease.

2d. The examination of samples of food and drink, at a nominal cost, on the request of local health officers; and,

3d. The instruction of students in hygienic investigations.

In accordance with the several objects, as stated above, health officers have frequently called upon the Director of the Laboratory to decide as to the potability of samples of drinking-water. Some analyses have been made for those residing in other States.

Method of Examination.—Naturally I have been anxious to make the reports on these waters as thorough as possible. I regard the following conditions as essential to a satisfactory examination of drinking-water:

1. The report must be returned to the health officer within a week, at most, after the water has been received. Typhoid fever appears in a village and a certain water supply is suspected. The health officer sends a sample of the water, and he will hardly be satisfied if he has to wait a month or longer for the report. At first I isolated the germs by means of plate cultures and inoculated animals with pure cultures of each germ. This method was pursued with the first thirty-eight samples given in the table. But the time required was too long, and the following procedure has been adopted: In all cases where the samples are collected by the laboratory assistants, a sterilized flask closed with cotton is used. In other instances, when I am informed by a health officer that he desires the analysis of a water, I send him a sterilized bottle, or instruct him how to sterilize a bottle. In other cases, the water comes usually in a new bottle or jug, which has been well rinsed with the same water. As soon as the water is received, plate cultures are made and a test-tube of beef-tea is inoculated with one drop of the water. This tube is placed in an incubator and kept at 37° C. for twenty-four hours. Then twenty drops of the beef-tea culture are injected with a sterilized syringe into the abdominal cavity of a white rat or guinea-pig. In some instances rabbits have been used, and with these the amount injected has varied from twenty to sixty drops, according to the size of the animal. If the water contains a pathogenic[1] germ the animal dies, usually within twelve hours. A post-mortem is made, the gross appearances noted and plates are prepared from the spleen, liver, kidney, and sometimes from the blood. After twenty-four hours longer these plates have generally developed (in some instances a longer time is required), and they are compared with the plates made directly from the water. On the plates made directly from the water the germs are counted and their general appearance noted after twenty-four, forty-eight, and seventy-two hours. In the meantime the chemical analysis is completed, and under favorable circumstances the report can be made three days after the water has been received. A week furnishes all the time required in any case. The germs taken from the plates can then be studied at leisure.

2. The second condition, which I regard as essential, is that the report, especially when the water is condemned, should be of such a nature that it will convince the average mind. No method of chemical analysis, with which I am acquainted, will do this. The ordinary bacteriological examination is no better. If the analyst reports a thousand germs in a drop of water, and stops at this, he will find that his report is not satisfactory. Immediately he will be asked if these germs are capable of doing any harm. It is true that the fact that a germ kills a rat does not furnish positive proof that it will cause

[1] The word *pathogenic* is used in the sense of *capable of producing death*, and it does not mean the production of any specific disease.

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disease in man, but it is the most convincing proof that I know of that the water is not safe to drink. The search for certain pathogenic germs has not been attended with great success. The detection of Eberth's germ, by those who believe in its existence in all drinking-waters which cause typhoid fever, is admitted to be very difficult. I have only to refer to the recent work of Tiemann and Gärtner on the examination of drinking-water in proof of this assertion.

SAMPLES OF DRINKING WATER EXAMINED IN THE HYGIENIC LABORATARY OF MICHIGAN UNIVERSITY, FROM OCTOBER 1, 1888, TO MAY 1, 1890.

No.	Water sent from	Kind.	Class.	Free ammonia.	Albuminoid ammonia.	Chlorine.	No. of germs.	Kind of germs.	Remarks.
1	Omaha, Nebraska	Well	Second	0.168	0 118	129 0	50	No. 10 was found in all the Omaha samples; No. 8 in sample No. 4; No. 25 in Nos. 1, 3, and 4; Nos. 9 and 30 in samples 5, 7, 8, 9, and 10; undescribed germs were found in samples 2 and 4.	Pure cultures of each of these germs in beef-tea, twenty-four hours old, were injected into the abdominal cavity of rabbits and rats; all were without effect.
2	" "	"	"	0.050	0.124	97.0	46		
3	" "	"	"	0.664	0.230	12.0	120		
4	" "	"	"	0.162	0.116	45.0	50		
5	" "	"	"	0.094	0.112	23,0	26		
6	" "	"	"	0 028	0.090	34.0	18		
7	" "	"	"	0 022	0.102	48.0	38		
8	" "	"	"	0.172	0.088	48.0	36		
9	" "	"	"	0.054	0.068	98.0	20		
10	" "	"	"	0.032	0.096	8.0	8		
11	Coldwater, Michigan	"	"	0.270	0.045	8.0	500		
12	" "	"	"	0.015	0 025	14.0	712	Nos. 6, 8, and 10 were found in these waters	Inoculations of rabbits were without effect.
13	" "	"	"	0.270	0.040	15.0	370		
14	" "	"	"	0.025	0.040	12.0	580		
15	Ida, "	"	"	0.910	0.120	155.0	2000	No. 10	Inoculation of rabbit was without effect.
16	Brown City, "	"	"	0.220	0 096	8.0	400	Nos. 8 and 10	Inoculations of rabbits were without effect.
17	Kalamazoo, "	"	Third	0 c41	0.084	".0	93	" "	" " " " "
18	" "	"	"	0 020	c.066	7 0	60	" "	
19	Mt. Pleasant, "	River	Second	0.094	0.208	79.0	3000		Inoculations of rats were without effect.
20	Gambier, Ohio	Well	"	0.065	c.062	240.0	683	Nos. 6, 8, 9, 10, 25, and 30	Inoculations of all the germs on rats and rabbits were without effect.
21	Allegan, Michigan	"	"	0.206	0.148	33.0	300	No. 10	Inoculation of rabbit was without effect.
22	Three Rivers, "	"	Third	0.070	0.046	9.0	25		
23	" " "	"	"	0.108	0.072	7.0	80	" "	Inoculations of rats and rabbits were without effect.
24	" " "	"	"	0.024	0.054	7.0	22		
25	Allegan, "	Hydrant	"	0.220	0.066	31 0	40	" "	Inoculations of rats were without effect.
26	" "	Artesian	"	0.272	0.056	12.0	25		
27	Coldwater, "	Well	"	0.024	0.038	14.0	16	" "	Inoculation of rat was without effect.
28	Kalamazoo, "	"	"	0.144	0.058	9 0	280	Nos. 8 and 10	Inoculations of rabbits were without effect.
29	Tecumseh, "	"	Second	0.037	0.078	10.0	40	No. 10	Inoculation of rat was without effect.
30	Ishpheming, "	Lake	Third	0.228	0 418	6 0	455		
31	" "	"	"	0.036	0.222	2.0	50	Nos. 8 and 10	Inoculations of rats and rabbits were without effect.
32	" "	"	"	0.038	0.208	3.0	48		
33	Three Rivers, "	Well	"	0.200	0.036	0.9	30		
34	" " "	"	"	0.060	0.102	0.7	25	No. 10	Inoculations of rats were without effect.
35	" " "	"	"	0.016	0.062	1 0	22		
36	St. Louis, "	Reservoir	"	c.060	c.210	23.0	8400	Nos. 6, 7, 8, 9, and 10	Inoculations of rats and rabbits were without effect.
37	" "	Pine River	"	0.044	0.320	24.0	1008	Nos. 6, 8, and 10	
38	Climax, "	Well	Second	0 006	0.084	4.5	105	Nos. 8 and 10	Inoculations of rats were without effect.
39	Grand Rapids, "	River	Third	c.030	0.134	10.0	36000	Bacillus D.	Rabbits inoculated with No 39 died, while those inoculated with No. 40 were not affected.
40	" " "	"	"	0.024	0.075	6.0	120		
41	Ann Arbor, "	Cistern	First	2.223	0.904	3.0	3000	Bacillus A.	Rats, guinea-pigs, and rabbits inoculated with this germ died.
42	Negaunee, "	Lake Teal	"	0.228	0 368	30.0	920	In No. 46, germs Nos. 8, 10, 25 were found; in Nos 42, 43, 44, 45 was found, in addition to the above, bacillus E	Rabbits inoculated with bacillus E died. Those inoculated with the other germs from the same waters were not affected.
43	" "	" "	"	0.232	0.460	30.0	1240		
44	" "	" "	"	0 296	0.448	40.0	772		
45	" "	Mine	"	0.312	0.236	140 0	2060		
46	" "	Sand shaft	Third	0.042	0.120	40.0	772		
47	Mendon, "	Well	Second	0.019	0.048	4.0	25	No. 10	
48	" "	"	"	0.020	0.210	34.0	100	Nos. 8, 10, and 25	Rats were not affected.
49	Deerfield, "	"	First	0.508	0.168	695 0	898	Bacillus C.	Rats inoculated with this germ died.
50	Northville, "	"	Second	1.136	0.732	6 7	1550	No. 10	Inoculation of rats was without effect.
51	Iron Mount'n, "	"	First	1.256	1.920	44.0	1500		
52	" " "	"	"	0.384	0.840	20.0	1350		
53	" " "	"	"	0.784	0.960	52 0	1260	No. 10 and bacillus B were found in all these waters.	Rats, guinea-pigs, and rabbits inoculated with bacillus B died.
54	" " "	"	"	0.904	1.360	16.0	1700		
55	" " "	"	"	0.456	0.944	12.0	850		
56	" " "	"	"	0.464	1.256	28.0	950		
57	Ann Arbor, "	Cistern	"	0.318	0.262	6 0	1200	Bacillus A.	Rats, guinea-pigs, and rabbits inoculated with bacillus A died.
58	" " "	"	"	0 492	0.504	9.0	1770		
59	Rankin, Illinois	Well	"	3.512	0 332	24.0	738	No. 10 and bacillus B	Bacillus B is fatal to rats, guinea-pigs, and rabbits.
60	Pomfret, Conn.	"	Second	0 104	0.116	4.0	151	Nos. 8 and 10	Inoculations of rats were without effect.
61	Sherwood, Mich.	"	First	0.194	1.160	7.0	4116	No. 34	Rats inoculated with this germ were not affected
62	Soudan, Minnesota	Lake	Third	0.144	0.488	3.0	428	No. 30 and bacillus E	Rats inoculated with E died.
63	" "	"	"	0.132	0.488	4.0	459	" "	Rats inoculated with No. 30 were not affected.
64	" "	Well	Second	0.120	0.090	2.0	28	" "	
65	" "	"	"	0.072	0.124	2 0	4	Bacillus A	Rats inoculated with A died.
66	Lake City, Mich.	Lake	Third	0 154	0.280	3.0	124	No. 30	Rats were inoculated without effect.
67	Iron Mount'n, "	"	"	0.260	0 270	4.5	9	" "	" " " "
68	Ironwood, "	Well	"	0.176	0.248	9.9	12	" "	" " " "
69	Ann Arbor, "	Spring	"	0.012	0.016	2.5	0		
70	" " "	"	"	0.044	0.120	4.0	4	No. 30	Rats were inoculated without effect.
71	" " "	"	"	0 050	0.080	6.0	0		
72	" " "	"	"	0.090	0.214	4.0	6	No 30	
73	Leslie, "	Well	Second	0.536	0.840	14.0	104	Nos. 10 and 30	" " " "
74	" "	"	"	1.144	0.984	12.5	2940		
75	Ann Arbor, "	"	Third	0.064	0.064	17.0	150	No. 34	" " " "
76	" " "	"	"	0.068	0.070	6.0	60	" "	" " " "
77	" " "	Spring	"	0.124	0.194	3.5	295	No. 30	" " " "

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There is no need of my going into detail concerning the method of chemical analysis. I have nothing new to offer in that line, and have practically followed the methods of Wanklyn. The chemical analysis is much more extensive than is shown in the table. I have given only the results of the estimation of free and albuminoid ammonia and chlorine, because much importance has generally been attached to these by chemists. In addition to the figures given in the table, a record is made of the physical properties, including hardness, the amount of residue inorganic and organic, the amount of oxygen consumed in the permanganate process, of sulphates, earthy bases, nitrates and nitrites.

Explanation of the Table.—The waters are divided into three classes. The first class contains those which are supposed to be causing typhoid fever at the time the water is sent, or only a few days before the water is sent. In other words, the water has been sent on account of the present existence of typhoid fever among those using it. In the second class I have placed those waters which are not supposed to be causing typhoid fever at the time, but which are suspicious on account of unsanitary surroundings, or on account of former sickness among those using it. In the third class are given those waters which have not been suspected of causing disease, and the sanitary surroundings of which are not said to be especially bad. Several of this class have been sent for analysis, in view of their possible selection for the future water-supply of cities and villages. The figures given in the chemical part of the table represent parts per million, the chlorine being calculated as sodium chloride. The number of germs in one drop of the water is shown. In the column "kind of germ," the figures refer to the corresponding ones given in the tables of Eisenberg (*Bakteriologische Diagnostik*, Zweite Auflage), and the letters refer to germs which have proved fatal to the animals inoculated. In all cases, even in those in which the germ was recognized as one well known to be common in water, animals were inoculated. I am well aware of the fact that *old* cultures of some of the ordinary water germs may, when used in large amount, kill animals, and this has been avoided by using cultures only twenty-four hours old. Moreover, a number of the ordinary germs of water will, in quantities of from ten to twenty drops of cultures only twenty-four hours old, kill mice, therefore this animal has not been used. The rat seems especially suitable for this work, on account of its resistance to the ordinary water-germs. I think that this animal is more suitable than the rabbit or guinea-pig.

Other waters have been partially examined, some chemically only, and others bacteriologically only, but I have given only those which we have examined both chemically and bacteriologically, and only those the germs of which have been tested by inoculations.

Remarks on the Table.—It will be seen that the waters are distributed in classes as follows: In the first, 16; in the second, 29; in the third, 32. In 15 out of the 16 typhoid waters, germs pathogenic to the lower animals were found. The exception was water No. 61, from Sherwood, Mich. The number of germs in this water, as is seen, was large. The germs were all of one kind, No. 34 of Eisenberg, the white non-liquefying bacillus of water. Beumer and Peiper have shown that cultures of this germ kill mice, but that the effect is due to the poisonous chemical products of the germ in the cultures, and not due to the growth and reproduction of the organisms within the animal. Rats were repeatedly inoculated with twenty-four hours' cultures, and notwithstanding the fact that the amount employed was doubled, no effect was produced. Dr. Nelthorpe, who sent the sample of water, wrote as follows:

"The well is 40 feet deep, and distant 40 feet from a privy, and 28 feet from a hog-yard. The well was an old open one, but a gas pipe was put down 10 feet below the bottom of the well, the open part not being filled. The whole family of six children, and father and mother, have been attacked. So far, only one death has occurred."

All the circumstances being taken into consideration, the water was condemned. It will be observed that chemically it was very bad.

Out of the 29 samples of the second class, only one, No. 65, from Soudan, Minn., contained a pathogenic germ. C. T. Waters, who sent the sample, wrote:

"The well is 80 feet deep. It is situated on a considerable knoll, with still higher ground on one side, on which is a privy vault about 200 feet distant. Slightly lower than the surface of the well on the other side, at a distance of about 40 yards, is another privy."

The number of germs deserves attention. Chemically, the water was among the best. Its use was not advised, notwithstanding the chemical showing and the small number of germs. The microörganism will be described later. If I was right in condemning this water, the inadequacy of a chemical analysis and the ordinary bacteriological examination is here well demonstrated.

Of the 32 samples of the third class, two contained germs pathogenic to the lower animals, and these may be worthy of comment. No. 39 was from Grand River, and no one acquainted with the course of that river will claim that the sanitary surroundings are free from suspicion, a number of small cities discharging sewerage into it. I have hesitated about the class in which this water should be placed, and finally I classified it as I have, simply because the water was not sent to me on account of the unsani-

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tary surroundings, but for the purpose of comparing it with No. 40, and in this comparison lies an interesting fact. No. 40 is said to be obtained from springs, but, as I understand it, the so-called springs are only wells sunk near the bank of the river, and into which the river-water filters. The two waters differ only in degree. They contain the same germ, which probably does not kill by growth in the body of the animal, but by the formation of poisonous chemical substances. In No. 39 the number of germs was 36,000, in No. 40 only 120. It is probable that even within twenty-four hours the larger number of germs produced enough of these poisons to kill the animal.

The next member of this class which contains a pathogenic germ is No. 62. This water was from Lake Vermilion, Minn., and this sample was taken from near the shore—water No. 63 comes from the middle of the same lake. It will be seen that in their chemical composition and number of germs, these samples differ but little.

Each of the waters of the first class deserves brief description. The first of these is No. 41. Of the cases of typhoid fever supposed to be due to this water I had personal knowledge. First, a girl of sixteen years was attacked, and I was called in attendance. I inquired concerning the drinking-water, and was told that the hydrant water *only* was used. I could not believe that this water was the cause of the fever, but ordered that all water used in house should be boiled. I was asked if the disease was contagious, and replied in the negative, but having in consideration the comfort of my patient, advised that two young brothers and a girl visiting at the house should be kept away from the sick-room. Within eight or ten days one of the brothers came down with the fever, and we learned that the visitor, who had gone to Cincinnati, was suffering from the same disease. Of course, the mother now claimed that the disease was contagious. Believing that there must be some local cause, I examined the house throughout, but without satisfaction. A little later, a young man rooming in the house was attacked. By this time the first patient who had been continuously delirious for three weeks, had become rational. When asked about having used any other than the hydrant water, she stated that she always used the cistern water to clean her teeth, and had also used it in a nasal douche, and in spraying her throat. The brother and the student also remembered that they had occasionally drank the cistern water.

The examination of the water was immediately undertaken, and, as is seen from the table, it was found to be exceedingly bad chemically, and in number and kind of germs. The stools of two of the patients were then examined and the same germ found so abundantly in the water was recognized in the stools. Of course, I cannot say that this germ was the cause of the disease. Fortunately, all of these cases finally recovered and there was no opportunity to examine their spleens. I cannot refrain from mentioning a few facts concerning the symptoms. Delirium was a marked and persistent feature; it was not the low muttering delirium, but wild, causing the patients to attempt to get out of bed. The fever ran forty-two days. There was no eruption over the abdomen. The patients who drank of the waters, Nos. 57 and 58, were also under my care, and, in general, the symptoms were similar to those given, but not so grave.

In regard to the outbreak of typhoid fever at Negaunee (waters 42 to 45), Dr. Lombard has furnished me with the following statements: The first case appeared in July, 1889, and the last in January, 1890. The total number of cases reported was 358, of which 32 proved fatal.

Negaunee takes its water-supply from Teal Lake, which covers about 600 acres of land and is supposed to be fed by underground springs. In 1886, Dr. Lombard asked the State Board of Health to assist him in preventing the contamination of the water of this lake. Drs. Avery and Baker visited Negaunee for this purpose, and from their report the following quotation is taken:

"Midway between the natural outlet and the water-works and on the border of the lake is situated a slaughter-house, where the principal part of the slaughtering for the city is done. A few rods nearer the water-works is a smaller slaughtering-house. Both of these places drain directly into the lake at certain seasons, and through a small quantity of sand at other times. The houses and their surroundings were as filthy as they could well be made. The stench in and around them was simply unbearable. In the larger house there was a great pile of heads, the accumulation of two or three years' killing and in various stages of decomposition. In another corner was a pack of salted hides. On and under the floor there was decomposed and decomposing blood; and outside the building wagon loads of refuse, rotting and stinking."

At the solicitation of these gentlemen, the slaughter-houses were removed. How thoroughly the shores of the lake were cleaned we are not informed, but of one thing we can be quite certain, the large amount of organic matter which was poured into the lake for years was not removed, save as in solution, or as finely suspended matter, it passed through the natural outlet or was pumped into the water-supply, and on this point a further short quotation will be of interest:

"At the time of the visit of your Committee, not more water than would pass through a two-inch pipe, with an incline of one inch to the rod, was running from the outlet, while at the works there was being pumped about 600,000 gallons per day, practically making the outlet of the lake at the water-works."

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In regard to the Deerfield water (No. 49), Dr. Yale wrote me the following facts:

"There were seven cases of typhoid fever among those using the water of the well. The water comes up from a four-inch bore 80 or 90 feet into a reservoir 18 feet deep. As the reservoir is not well covered, it is probable that something has fallen into it."

The large amount of salt in this water is of no significance on account of the nearness of the saline deposits to the surface at that place.

The Iron Mountain waters (Nos. 51 to 56) were from shallow wells, and as I have elsewhere[1] gone into detail concerning the condition of the drinking-water of this place, I will not say more on the subject.

The Rankin water (No. 59) was from a drive well 218 feet deep, but the bore is larger than the pipe and surface water could easily pass into the well in this way. There is a barnyard near.

Remarks on the pathogenic microörganisms — *Bacillus* A.—This germ was found in waters 41, 57, 58, and 65. It is a short motile bacillus which does not liquefy gelatin, and its growth on potato presents a white, raised, moist surface. It produces no gas, takes the ordinary stains fairly, and gives a positive result with Gram's method. Of 6 full-grown rabbits each inoculated in the abdominal cavity with sixty drops of a twenty-four hour culture, all died. Of 2 rabbits, each of which were given subcutaneously twenty drops of this culture, neither was affected. Of 33 rats which had twenty drops of this culture, all died within twenty-four hours. Of 2 rats which were inoculated subcutaneously, both died after ten days. Of 8 guinea-pigs inoculated in the abdomen, all died; and a like result followed the subcutaneous inoculation of guinea-pigs. Cultures of this germ were tested along with similar cultures of bacterium coli commune, and the former appeared to be slightly more pathogenic with rats and guinea-pigs and less so with rabbits than the latter.

In every case of death after inoculation with this germ, plate-cultures were made from the spleen, liver, and kidney, and in many instances from the blood of the heart, and without exception the plates showed abundant growths. Therefore, this germ not only produces death, but is capable of living in the rat for ten days.

The post-mortem appearances vary with the time which elapses between the inoculation and death. In cases dying within twenty-four hours the intestines are, as a rule, slightly reddened, the liver, spleen, and kidneys engorged, and the heart has invariably been found in diastole. In cases which survive for several days there may be ulceration of the intestine, the spleen and kidney are enlarged, and the liver dark. In a few instances, all of which, strangely enough, have followed subcutaneous inoculation on the back, a marked peritonitis has been found after death. The same fact has been observed with bacillus B. In no instance has suppuration resulted from an inoculation.

Bacillus B.—This is also a short motile rod, which in cultures from four to six weeks old shows some liquefaction of the gelatin. It is certainly a slowly liquefying germ. It sometimes forms gas along the line of the stick. This occurs, if at all, during the first few days of growth and long before liquefaction begins. It forms a white, raised growth on potato. The ordinary stains are taken readily, and Gram's method yields positive results.

This germ agrees very closely with bacillus A in its pathogenic properties and in the post-mortem appearances induced—so closely, indeed, that it will not be necessary to repeat details. Yet the two germs are wholly distinct morphologically, and, as we shall see later, the symptoms produced by their chemical poisons differ. Moreover, this germ has, in the few instances in which it has been tried, failed to kill rats when inoculated subcutaneously, though it is fatal to guinea-pigs when employed in this manner. The plates prepared from the organs of animals killed with this germ have invariably yielded numerous colonies. The germ is also found in the blood.

Rats were inoculated in the same manner in every particular with bacilli A, B, and Eberth's germ. A and B killed a larger per cent. of the animals than Eberth's germ, but the post-mortem appearances were the same in the three sets of cases.

Bacillus C rapidly liquefies gelatin, the liquefaction beginning at the surface. It forms gas, is stained by the ordinary agents and by Gram's method. It resembles Eberth's germ in the formation of an invisible growth on potato, but in no other respect.

Some 20 rats were killed with this germ. The minimum fatal amount of the twenty-four hours' culture for white rats seemed to be between 10 and 15 drops. One strange observation was made. Cultures nine or ten days old are apparently less virulent than those only twenty-four hours old. Moreover, the germ decreases in virulence as it is grown in the artificial media, until in about the sixth generation it may be employed in four times the quantity first used without any effect.

The post-mortem appearances are quite different from those observed with A and B. The intestines are reddened but the liver and spleen are tarry black. Cultures from these organs show numerous liquefying colonies.

Bacillus D, as has already been noted, is probably not pathogenic, but kills on account of the chemical

[1] THE MEDICAL NEWS, vol. lii. p. 92 et seq.

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poisons rapidly developed. Further study of this germ is needed before statements can be made concerning it. I can only say that it does not correspond with any germ given in the tables of Eisenberg.

Bacillus E is non-liquefying. It grows slowly in stick cultures, and forms a scarcely visible growth on potato. It decreases in virulence with artificial cultivation, and while none of the other germs in these waters showed any pathogenic properties in pure cultures, beef-tea inoculated with a drop of the water never failed to kill rabbits and rats, while bacillus E in pure cultures frequently failed to produce death. Moreover, after the death of these animals inoculated with the mixed culture, bacillus E was the only germ found living in the organs. The following quotation from my notes will illustrate this: October 28, 1889, a large rabbit was inoculated with sixty drops of beef-tea, to which one drop of the Negaunee public water had been added. October 29th. Animal found dead at 9 A. M. Post-mortem showed small intestines and mesentery highly inflamed; no other changes observable. Plates made from spleen, liver, and kidney showed pure culture of germ marked "Negaunee."

It is possible that this is Eberth's germ, though of this I am not certain. Unless this be the exception, I have not found Eberth's germ in any of the waters.

The chemical poisons produced by bacilli A *and* B. —Cultures of these germs, after being heated to 100° C. for one hour, lose all their poisonous properties. I concluded from this that their chemical poisons are destroyed at this temperature, and determined upon the following method of isolating them: eight quart flasks of beef-broth were inoculated with each germ and kept in the incubator, at 37° C., for ten days. They were then filtered twice through heavy Swedish filter-paper, and during the last filtration the filtrate was allowed to fall into a large volume of absolute alcohol. A copious flocculent precipitate was produced; the supernatant fluid was decanted and the precipitate repeatedly dissolved in water and reprecipitated with absolute alcohol. Finally, the precipitate was collected in a dish and immediately placed in a desiccator over caustic potash (or over sulphuric acid, though the former seems to prevent decomposition better). After drying, small quantities (about the size of a large pea) were dissolved in water and injected into rats, producing death in about three hours. These poisons are albumins. They are soluble in water, from which they are not precipitated either by heat or nitric acid, singly or combined. They are precipitated by saturating the aqueous solution with ammonium sulphate, and are, therefore, not peptones. They are not precipitated by carbonic acid gas, or by sodium sulphate to saturation, and are, therefore, not globulins. The aqueous solutions respond to the xantho-protein and biuret reactions.

Chemically, I can so far distinguish no difference between the poisonous albumins produced by the two germs, but physiologically there is a great difference. That from bacillus A produces in a few minutes complete paralysis of the voluntary muscles, and the animal lies perfectly limp, with rapid breathing, until death occurs. The proteid of bacillus B is equally poisonous, but it induces no paralysis of the voluntary muscles, and death apparently results from gradual heart failure. After death from these poisons no abnormal appearances could be detected. The heart was found in diastole. Plates were made from the kidney, spleen, and liver, but remained sterile.

It is absolutely necessary in obtaining these poisons that they should be quickly transferred to the desiccator. Only a few minutes' exposure to the air while moist converts them into hard, brown, leathery substances soluble in water only with great difficulty and wholly inert. The further study of these poisons promises to be of interest.

Whether or not any crystalline poisons are formed by these germs I have not yet determined.

I have intentionally refrained from offering any theories, but have simply stated the facts gathered in the study of these waters. There are from 350,000 to 400,000 cases of typhoid fever in the United States yearly. Medical men believe that these are almost wholly due to impure drinking-water. If this be true, it does seem that with all the advances which have been made in methods of chemical and bacteriological study we should be able to detect the harmful agent or agents in these waters.

I conclusion, I desire to thank my able assistant, Dr. F. W. Brewer, and my students, Mr. Churchill, Miss Schryver, and Miss Hinkley, for their valuable assistance, without which the work could not have been done.

A RETROSPECT OF ABDOMINAL SURGERY.[1]

BY JOSEPH PRICE, M.D.,
OF PHILADELPHIA.

UNDER this title I wish briefly to call attention to the accomplishments of abdominal and pelvic surgery, together with the influences that have led to such successful results in the handling of diseases of the peritoneum. Among the first of these influences must be considered early operations in the hands of those best able to appreciate the necessity, if the ultimate safety of the patient is to be considered. In the light of proven statements of operative surgeons, physicians in general practice have no longer the right even to question the expe-

[1] Read before the American Medical Association, May 20, 1890.

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diency and necessity of referring women afflicted with abdominal growths, small or large, at once to the attention of the skilled surgeon. They have no right to *suppose* in the case at all. They are not and cannot be judges of the situation, and by presuming or pretending to be so they reflect ultimately on their skill as physicians and on their unselfish honor as men. It must be taken as a corollary to the now established propositions of abdominal surgery, that in the large majority of cases the earlier the operation the greater the chance for success. That there may be an occasional exception to the rule is no excuse for delay, for if now and then an exception occurs, it is such as one not skilled in abdominal diagnosis is able to decide upon.

Looking back over the field of abdominal and pelvic surgery, nothing can strike the practical surgeon with greater force than the change that has come over opinion as to what is and what is not a justifiable operation, a question which is of paramount importance in determining the choice of cases. To know what to operate upon and what to refuse as inexpedient, impossible, or useless, is primarily of the greatest importance to the patient, to the physician, and to the surgeon. Up to a period measured scarcely by years it was the custom to bring so-called pelvic "abscesses" to the surface, stitch them there, and leave them to drain away. Extra-uterine pregnancies were not operated upon at all, or most exceptionally. When they were interfered with, it was only in a tentative way, that had nothing exact in its methods, and nothing tangible in its results except the death of the patient. There was preliminary puncture, with subsequent hæmorrhage or peritonitis, or there was injection of morphine into the sac, or a trial of electricity. The last two procedures are still flapping their ghastly wings like vultures over their graveyard records and inviting new victims. Although so prominent a man as Barnes still refers to the possibilities of morphine injections into the extra-uterine sac, by practical surgeons the suggestion must be thrown aside. As to electricity, if it has a place at all it is where it is not needed, and where surgical interference is by all odds the safest and surest method, both of doing no harm and of leaving no post-operative complications. Practical surgery like all other sciences, must leave pure theory behind. A theory may be enticing and brilliant, yet if it is not substantiated by facts and if it does not prove its worth it is left behind. Pure theory looks at facts from the outside, not from experience The theorist has his mind full of ancient pathology, constantly contrasts it with the more modern exposition of the same subjects, and is lost in a maze of bewilderment that the two should be so widely at variance. He may be on the verge of an exact diagnosis, or at the point of urging radical surgery to relieve the patient, when the wraith of defunct pelvic cellulitis rises hazily before him, obscures his mental vision, and drives him back to opium, hot water, and poultices. It is still no unusual occurrence to have inflammatory tubal troubles dubbed "cellulitis," and to have some guiding star sought to point out the difference between a condition that is benign because it does not speedily kill, and the same condition further advanced, yielding only to the knife. It should be strongly impressed upon the general surgeon and the general practitioner, that operative gynecologists do not find pelvic cellulitis. Electricians, experimentalists, and conservative procrastinators have a monopoly of this condition. It is not to be forgotten in connection with this that diagnosis with the latter men is the most exact part of their work. Their refinements are such as are not attained by any other class of operators, and where they can easily establish the existence of microscopic lesions of course they can cure infinitesimal disease, which has its chief exponent in pain. Pain apart from lesion should rarely in gynecology be assumed as a proper cause for operation. And among careful surgeons, the reproach of indiscriminate operation so soon as a woman comes complaining of pain, is unmerited. It is to be remembered here that we deny the right of the word conservative to be misapplied to a set of surgical pretenders, who are not conserving, but only riding on a wave of popular favor, because the word conservative is construed into meaning "careful," and that the conservative surgeon is the safer man to deal with is assumed. Let us see. To a man these "conservative" men are without experience. If they have attempted radical surgery they have failed, and abandoned it on that account. If they are young men they have been dragged into the electrical vortex, and while they would laugh at witches and witchery, they ascribe greater accomplishments and mysteries to the electrical current than was ever done to Aladdin and his wonderful lamp. Electropath, hydropath, homœopath—of the three the greatest humbug is the electropath. What conclusions are we to reach then concerning the wonderful cures attributed to this and that panacea?

Simply this, that the cure rests upon an incorrect or fallacious diagnosis, or that a temporary improvement of a condition which often occurs even without treatment has been misinterpreted a cure, or that after a short term of treatment a cure is presumed because the patient disappears, or that an incorrect report has been given, which unfortunate as it is, is too often the case. Now the whole truth of the matter is that, were half the efficacy attributed to electricity in curing disease in other

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parts of the body that is attributed to it in the treatment of the generative organs, it would justly be laughed out of sight at the first hearing. If an ovarian abscess, or a pus collection in the pelvis, is curable by electricity, so is it in any other part of the body. If a fibroid can be dispersed by the same means, let it by all means be tried in bony tumors, or in necrosis of the jaw, or in osteo-myelitis. The mysterious force that can destroy one pathological product, ought not to fail in another which is no worse. The assumed results cannot be taken as real in one set of cases more than in the other. Then again the electrical treatment is set down as only suitable for a certain class of cases. What this class is no one has yet been able to ascertain. If it is fit for one set only, who is to determine when a tumor falls within this class? This is the difficulty that only the electricians are able to solve. They are able to do so, because they have never had actual expetience in dealing by sight and touch with these tumors. No man, however skilful he may be, can say positively what are the peculiarities of an intra-abdominal growth. The same is true of a majority of the mixed pelvic conditions. No lesion is unique, or as a rule simple. Complication is the rule, and where complications exist, conditions are more apt to exist in which experimentation will do harm rather than good.

Even for direct surgical operation discriminating care is to be taken in determining proper cases. It is madness to operate upon dying patients, for the result is only quoted as a failure for the surgeon and a reproach to surgery, and is an alarm to other sufferers. In acute inflammatory troubles, septic or specific, it is sometimes urged to wait until adhesions have formed, or until pre-operative treatment has been applied, to simplify the operation. This has no justification in experience. All the preparatory treatment advisable is that necessary to prepare the patient, so far as her ordinary functions are concerned, to undergo the stress of operation. Stimulation and tonics are at times demanded, as well as measures to quiet an irritable stomach. When lung complications exist, operation is to be deferred until these are held in abeyance. Except in suppurative disease it should also be well assured that the kidneys are not doing defective work. After operation where there is the least suspicion of kidney derangement opium is all the more to be avoided, not only as useless but as harmful. Now while early operation is to be advocated in inflammatory conditions, in evident pathological changes and in neoplasms, it is the more to be urged here, because here there is no hope of effecting resolution, for the trouble is organic from the start. Waiting increases the size of the growth and its adhesions interfere with other organs. There is no better proof of this than the result of present operations, in which it is the rule for tumors to be small at removal, compared with the results of the same class of operations a decade ago. The figures are all on the side of prompt removal when a foreign growth is discovered.

Complications are the chief difficulties of all pelvic and abdominal operations. The removal of a simple cyst, or of a growth, unconnected with other organs, is usually simple, but when there is a general fusion of all the pelvic contents, bladder, uterus, omentum and intestine in one conglomerate mass, the manipulation can be accomplished only by skilled hands made so by experience and study, and by a general knowledge of normal relations, and of those assumed under pathological conditions.

A knowledge of how to deal quickly and safely with adhesions, requires more special abdominal training than can be understood or appreciated by the novice or the prurient thirster after abdominal fame. Men of this sort are rendered more dangerous than rabid animals if they by chance in their first encounter with abdominal or pelvic surgery meet an easy case. They then imagine they have mastered the whole subject, and are accordingly all the more unfit to meet the exigencies of any particularly difficult case, because they underestimate the possibility of complications and overestimate their own ability. Of late there has been a great mass of discussion on the sequelæ of abdominal surgery. This discussion involves both the existence and the causation of the sequelæ. Too often the occurrence of some particular sequel has been explained from a personal not a scientific standpoint. Fistulæ for instance, have been attributed to the use of the drainage-tube, when a close study of the operator's work shows that he does not know how to care of a drainage-tube, and therefore is not competent to either commend or condemn it. To clean a tube once in twenty-fours is to put it where it is not needed, and the same is true of cleaning it every twelve hours. A drainage-tube carefully introduced, carefully kept clean, and early removed, has no more reason to cause a fistula, than has the suture in the uterus after Cæsarean section. Another class of operators trace their fistulæ to ligatures, silk being especially condemned. Now I have never, so far as I know, had a fistula after operating, while I have used silk constantly for the stump and the pedicle. The great points are to have as fine a ligature as is consistent with safe tying, to tie in sound tissue, and to cut the ligatures close. Catgut I regard as more or less unsafe, both from its nature and from its physical properties. In the first place we cannot know that it is really aseptic, and secondly it shrinks on the pedicle. Mann, in a late report of

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his work, lays the blame of fistulæ on the silk ligature and then, strangely, reports a case where a gut ligature had given him identical trouble. Such statements only show that the faultiness of certain procedures, more than anything else, lies at the bottom of the occurrence of this complication. As to hernia, I have elsewhere dealt with that subject so fully, both in papers and discussions, that I do not deem it proper to resume it here.

Finally, the results of all these operations depend largely on the experience and training of the operator. Many cases do not necessarily make a skilful operator. Many men of large experience, so far as the number of operations is concerned, do not obtain results such as we would expect. Other men with a comparatively few cases have results that stamp their work as careful and conscientious. Work in order to be successful must be done only for the good of the patient, without thought of self or of grafting original methods or instruments upon a branch of surgery already too much cumbered with names and paraphernalia. The trappings, the adornments, and the cumbersome machinery of the old operating-room and table are all to be set aside; simplicity and directness are to be sought, and above all a learning, receptive spirit, that is not vain or puffed up with its own accomplishments, and that learns from others and by its own failures—for failures we all must have. They should be few, but they nevertheless will occur. Miracles are no more possible in this branch of surgery than in others. Too much must not be promised, and too much will not be expected. No man can have good results who is not content to train himself faithfully, carefully, diligently, and tediously. To fail in these latter days of the art, because we do not know how to tie a ligature or to clean a drainage-tube, or to stitch and resect an intestine, is unjustifiable homicide.

A PLEA FOR THE GENERAL ADOPTION OF THE AXIS-TRACTION FORCEPS.[1]

BY JOSEPH HOFFMAN, M.D.,
OF PHILADELPHIA.

IN presenting any question concerning the forceps I am well aware that I am treading upon hackneyed ground. Without preface I shall hasten to the statement of my argument for the adoption of the axis-traction forceps. First of all, the use of the forceps is to be considered as an obstetric procedure, which before its employment is to be fully justified, both in the interests of the mother and of the child, entirely apart from the convenience or prejudice of the operator. The forceps are to be applied, neither because the mother demands them nor because they are a time-saving convenience for the obstetrician. Their use is strictly a logical one, and they must be indicated or contra-indicated, be differentiated from every fallacy of apparent justification. The question has been asked, Can there be a too frequent use of the obstetric forceps? On the other hand, we frequently hear of the "abuse" of the instrument. Now, if some practising obstetricians are in doubt as to whether they shall use the forceps on every occasion where there is delay or other seeming cause, and if others only occasionally use them, the position of the two is evidently entirely different. If the application is for obstetric good and not for convenience, which must be conceded, they must save either mother or child, or both, from troubles or dangers they would otherwise undergo. Given a normal pelvis and a normal head and presentation, with normal application of forces, the labor has only to produce the dilatation of the maternal soft parts. If such dilatation, both perineal and cervical, is tardy, it is evident that an early application of the forceps must be accompanied with injury to the maternal structures, while the injury to the child must, or should, be small, under skilful application of the instrument. If now, on the other hand, there is free relaxation of all the soft parts and a deviated presentation, or a slight disproportion between the diameters of the fœtal head and those of the pelvis, which uterine contraction and external manipulation have been unable to overcome, thereby prostrating the mother and interfering with the fœtal circulation, the use of the obstetric forceps comes under consideration as a preservative measure, and is directly advantageous, as the instrument can be applied without force or forcible effects upon either mother or child. It is at this point that the general misconception of the use and intention of the forceps arises. Probably it is a teaching fault as well as a learning fault. Once let it be considered that the fœtus in the pelvis is a foreign body like the aching tooth in the jaw, and we have the obstetric forceps and the old tooth-key, as similar instruments of torture, both having force as the foundation of the ends they would attain. This principle, unfortunately, even if not confessed, is that followed out by too many obstetricians and obstetrical teachers, whose lectures must indorse, as a result of their ideas, pressure forceps, blades useful for leverage, and the like. This idea makes the forceps a lever or a tongs, with which to pull or pry by force, and loses sight of the principle that it should be used as the supplement of existing forces and in their lines if they are normal, to restore them if abnormal, and to conserve them or reinforce them if they are weak, and to substitute them if under certain conditions

[1] Read before the American Medical Association, Section of Obstetrics, May 22, 1890.

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they are absent. Once accept and apply these principles and the abuse of the forceps ceases, even in cases where otherwise their application would be questionable. So far as the fœtal head is concerned, in what light must the ordinary obstetrical forceps be considered? From a mechanical standpoint we must see that the instrument works at a manifest disadvantage. Its adaptation to the fœtal head is maintained, no matter what the resistance opposed by the maternal structures, by a maximum pressure at the extremity of the long arm of the lever composing the handles. If the resistance is small the pressure is not less, but only shorter, owing to the speedy escape of the head, and expends itself to the disadvantage of the mother, and with damage to the perineal floor. If this pressure is not applied the instrument slips, and damages both the fœtal head and the maternal structures. If the resistance is great, the compressing force must be necessarily great to overcome it, while the contusing force upon the maternal structures is proportionate to the force expended in the axis of the pelvis and that lost against the pubic bones. In the use of the ordinary forceps this must exist; it is a mechanical necessity and must be overcome, if at all, by mechanical principles efficient according as they approach mechanical exactitude. True mechanics teaches us to use force gently, and if this is done better results are reached. Considered from the standpoint of the fœtus the force expended against the pubis is lost; considered from a maternal standpoint the force becomes harmful in its pressure-effects, just as the additional force by direct pressure upon the fœtal head is also harmful. It therefore appears that considered mechanically the ordinary obstetrical forceps is a defective instrument, permitting neither the satisfactory utilization of the force applied, nor its regulation so as to conform with the principles previously suggested. Now, as the pelvic axis is the line in which all forces must act in order to be effective, it follows that the greater the deviation from a normally formed pelvis, the greater must be the resistance to any force acting outside of or at variance with this axis, and that in cases of pelvic malformation the violence must be correspondingly great, both to maternal and fœtal structures.

The problem is accordingly presented as follows: Given a resistance; we must apply a force which shall work along the axis of the pelvis, and at the same time minimize lost energy and maximize the energy exerted in the axis of the pelvis and which alone is efficient in the expulsion or delivery of the fœtal head. The more nearly this problem is solved the more direct will be the traction, the less will be the force required, and the more natural will be the artificial delivery, or, as has been suggested above, the two will supplement each other. To fulfil the above indications numerous modifications of the common forceps have been invented, among which are those of Hermann, Hubert, Hartmann, Morales, and these, I think, we may justly say, finally culminated in those of Tarnier. The latter have been essentially modified by Poullet and others. The latest German idea, that of Breus, I regret not to be able to present. It is ably advocated by Winckel, though perhaps too much to the exclusion of Tarnier's forceps.

The conformity of the pelvis is such that when occupied by the fœtal head the problem is to bring an ovoid body through a circular canal in which a curved axis is presented. Now, to accomplish this it is evident that the force should be applied to the centre of the head or fœtal ball, and should act in the centre of the cylindrical passage, the vagina, at the same time varying the position of the application of the force as the head descends in the pelvic curve.

The ordinary objection urged against the Tarnier forceps is the danger of rupturing the perineum by the traction apparatus. This is entirely theoretical, as the rods are to be kept parallel with the forceps handle, and when this is done they practically fall within the blades, and can do no damage that would not otherwise occur. With both Tarnier's forceps and Poullet's modification some of the blunders yet common with some practitioners cannot be perpetrated. I refer more particularly to the so-called pendulum or lever motion of the forceps, and to the rotatory motion advocated by Osiander. These manipulations, while proper in the ruder arts, have no place in obstetrics, and can result only disastrously to the maternal tissues. It will be also seen that the direction taken by the head as it engages, must be in the path of the least resistance, inasmuch as the traction exerted does not guide, but only applies a force which is directed by the handle, which indicates lateral variations in the descent upon the perineum. These lateral deviations are the foundation of the excuse for the pendulum movements, which are only experimental manœuvres to determine in what direction the head will move most easily.

A brief epitome of the specific positions in which axis traction is especially advisable is all that can be here set down. First of all, in high operations in which it is desirable to make traction in the pelvic axis and not against the brim, a careful analysis of cases will show that the axis-traction principle offers better results so far as the mortality of the child and the effects on the maternal structures are concerned than pressure forceps.

As was before remarked, in deformed pelves the results must be even more notable. In occipito-

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posterior positions any tendency of the head to rotate is not interfered with, but is allowed to take place freely. In my hands I have noticed a complete revolution of the blades and, of course, of the head in their grasp. In other occipito-posterior positions, in which the perineum usually suffers severe laceration, the lifting effect of these forceps —which, while bringing the head downward and outward, nevertheless raises it toward the pubes—is peculiar, and cannot be imitated by any other procedure. The rotary motion of Osiander, while essentially the same in its intent, cannot be compared in its accomplishment.

In the low operation, in which the short forceps are commonly applied, the same effect can be justly claimed. The short forceps, as such, in my estimation have no place in obstetrics; I have no doubt that of all instruments they inflict the most damage to both mother and child. If, when the head is on the floor of the pelvis, there is any need for the application of forceps, the axis-traction principle is the one that fulfils all the indications, expediting labor and at the same time saving the perineum by lifting, not dragging, the head through.

The final argument for the general adoption of the axis-traction principle is, that by it the force is applied at the centre of or near the centre of the fenestration, and that hence the leverage effect which must be exerted upon the structures within the grasp of the blades must cause less direct violence.

THE CONTINUED FEVERS OF THE SOUTH.[1]

BY W. W. JOHNSTON, M.D.,
OF WASHINGTON, D. C.

THE opportunity of discussing the subject of the "Continued Fevers of the South" with men who are constantly and carefully observing them is one which I appreciate, for at the present moment there is no subject in the whole field of medical pathology which seems to me so interesting and in the study of which so much is to be learned and so great an advance to be made. The places in pathology of the prevailing continued fevers of certain parts of the country have been more or less definitely fixed within the last decade; but in the South—including under that term the Southern Atlantic States, the States of the Gulf Coast, and the Southwestern States—the difficulties in classification are much greater than in the Eastern, Middle, and Western States.

In the Southern country the conditions of climate and soil have impressed such modifications upon the prevailing forms of fever, or have created such varieties, that definition and differentiation are attended with more difficulties than elsewhere. Moreover, the continued fevers of the South are, in great part, mild in type and have a low mortality, so that, in those fevers which are most difficult to classify, the opportunity is not often afforded to study their lesions and thus to discover their true nature.

The questions to be considered, in order to reach clear views as to the nature of the Southern fevers, are these:

I. To what extent does typical enteric fever prevail throughout the South?

II. To what class do the negative, atypical forms of fever belong?

III. Has continued malarial fever or malarial fever of remittent type a very general prevalence?

IV. Is the enteric fever of the South modified by malarial infection, giving rise to a hybrid disease—typho-malarial fever?

I. In answer to the question as to whether the enteric fever of the South conforms in its type to the form of enteric fever as originally described by Louis, it may be said that among the physicians of the South the prevailing opinion is that typical enteric fever is a disease of rare occurrence, as compared with other continued fevers, and I might quote here statements of many physicians scattered throughout this region to show that "text-book typhoid" is in some places unknown, in others rarely seen. This is more true of the Gulf Coast and Southwestern regions than of the States of the Southern Atlantic Coast, where the typical form is more commonly observed. In the Gulf States the actual prevalence is less, and the death-rate lower, than elsewhere; in Texas, Arkansas, Kansas, lower Missouri, Kentucky, and Tennessee, while there are differences of opinion as to what degree of typical manifestation justifies the diagnosis of typhoid fever, yet the preponderating opinion is that the combination of true typhoid symptoms is not frequently observed. I have not been able to learn how far the present belief agrees with that of twenty-five or more years ago, but many physicians of the South assert that enteric fever is assuming a milder type and that it is becoming a rarer disease than formerly. Whether the disease is disappearing or is only putting on a new dress it is of importance to know. The latter is what my own experience teaches me is the case, for while the more virulent forms are less numerous than formerly, the disease under a milder and less fatal form is becoming our endemic summer and autumn fever, with a wide prevalence and low mortality. There are geographical differences in enteric fever, and there are also historical differences; and just as malarial fevers give place to enteric fever as cities are built and sewered, and as areas of country are more carefully cultivated and drained, so enteric fever is modified in time by changes in the soil and

[1] Read before the American Medical Association, May 21, 1890.

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in other conditions of environment under which its germs grow and are disseminated.

II. To what class do the *atypical* forms of fever belong—those which do not have the typical symptoms of malarial nor of typhoid fever? This category does not include those cases of mild enteric fever which have at least one of the more characteristic symptoms of the disease in addition to the more or less typical fever curve, but only those cases which have neither rose-spots, delirium, tympanites, nor diarrhœa, but in which a continued fever of moderate elevation, with diurnal remissions and exacerbations, lasts for from two to four weeks or longer, usually ending in recovery, but terminating sometimes fatally by intestinal perforation or hæmorrhage. These fevers have often a sudden onset, with a chill, and in the initial stages the symptoms have some malarial features, but they are not shortened nor markedly influenced by quinine.

There is a growing belief that such negative forms of continued fever belong to the same class as the more typical enteric disease, the reasons for this conclusion being based upon the study of large groups of cases, which show a gradual diminution in intensity and in the number of associated symptoms, until a continued fever, more or less conforming to the type of enteric fever, is the only symptom left. The occasional death by perforation or hæmorrhage and the finding of the typical lesions in the most negative cases have gone far toward confirming this conclusion.

We recognize in the whole class of infectious disease the greatest differences in intensity of manifestation. Some cases of scarlet fever and diphtheria escape observation altogether until dropsy or paralysis makes clear the nature of a preceding, almost unnoticed illness. And so it is not strange that enteric fever should sometimes be so mild as to be difficult of recognition. The question to be answered is this: Is it more probable that these mild forms of fever are "simple continued fever," "gastric fever," or "catarrhal fever," or are they mild manifestations of typhoid infection? The latter doctrine is the safer one in practice, and will, if adopted, avert that rude awakening to the fact that what was thought a slight illness is accompanied with a specific intestinal ulceration and all its attendant dangers.

III. Has the continued malarial fever or malarial remittent fever a very general prevalence in the South?

I include under this question all those forms of continued fever which are supposed to be due to malarial influence and variously denominated "malarial continued," "bilious remittent," "malarial remittent," or "remittent" fever.

There can be no doubt, if the large amount of testimony on this point is taken as a basis for a conclusion, that there is a form of fever prevailing in the South, which lasts from five days to two weeks, which begins with a chill, followed by rapid rise of temperature, by thirst, nausea, vomiting, frontal headache, and lumbar or other pains. A remission follows in from six to twelve hours, with relief to headache and other symptoms. If not promptly treated by quinine there is a recurrence of the rigors, fever, etc., these phenomena being repeated during five, seven, nine to twelve days. Quinine in these cases has a beneficial and curative effect. The existence of such a fever may be assumed and its malarial nature accepted.

But is there an adynamic malarial fever, or a malarial or remittent fever with typhoid symptoms? After a close reading of the descriptions given of the essential symptoms of this form it has seemed to me that there is no symptom which clearly establishes its malarial origin, but much in the history of the subject to show that very many such cases are really cases of typhoid fever. The records of cases in which the diagnosis of remittent fever was made in the early stages, but changed later to that of enteric fever, when some one characteristic symptom appeared, or cases which were called "remittent" or "malarial" until death resulted from perforation or intestinal hæmorrhage, or until an autopsy revealed the lesions of enteric fever and compelled a change in diagnosis, are scattered through hospital reports, army and navy reports of Great Britain and of the United States, and in the journals for many years. I will not be so bold as to say that there is no continued malarial fever or remittent fever, closely resembling enteric fever, in the South, but there is not a shadow of doubt that many so-called cases of "bilious fever," "remittent fever," or "continued malarial fever" are, in reality, cases of enteric fever which lack most of the typical symptoms of that disease. The change of view on this subject has been very decided in the last ten years in the cities of Boston, New York, Philadelphia, Baltimore, and Washington. Here "remittent fever" and "continued malarial fever" were at one time as generally recognized forms of prevailing disease as in Nashville, Memphis, or Mobile; but at the present time few in these former cities would venture to call a continued fever lasting over ten days "malarial continued" or "remittent," no matter how great the morning remissions might be.

IV. Is the enteric fever of the South modified by malarial influence, producing a hybrid disease—the so-called typho-malarial fever?

I approach this part of the subject with much hesitation, knowing how difficulties crowd the road to its solution; but while waiting for the time when the microscopist will decide whether the microör-

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ganisms of the two diseases are or are not coincident, much may be done by clinical observation to determine it. The great diversity of opinion alone serves to throw the gravest doubt on this belief.

The term "typho-malarial fever" has five distinct meanings in the minds of those who employ it. It means: (1) A continued malarial fever with typhoid symptoms which is not influenced by specific (quinine) treatment; or, (2) an enteric fever, with intermittent or remittent phenomena in the beginning or at the end of its course; or, (3) a continued fever, with gastro-hepatic disturbance; or, (4) a prolonged fever, of a certain gravity, without the typical symptoms of enteric fever, and not influenced by quinine; or, (5) a fever of a negative and mild character, without the characteristic symptoms either of malarial or of typhoid fever.

The strongest arguments for the theory of the union of the two diseases in one individual are the presence of supposed well-defined malarial symptoms in typical enteric fevers and the beneficent effects of quinine in such cases. To the first of these arguments it may be answered that the occurrence of chills in the onset or during the course of enteric fever, marked remissions in the fever-curve, gastric irritability, the vomiting of bile, icterus, and hepatic tenderness are not necessarily due to malarial infection, and may and do occur in the course of the enteric fever of localities where malaria is unknown. The most severe chills are seen in the course of enteric fever in Washington; they are probably septic in nature, and are not prevented by quinine treatment.

It is not wise to be too dogmatic on this point, but as many writers of the South have advanced such strong assertions in denial of the existence of typho-malarial fever, I feel more assurance in expressing my own adhesion to the same view. In no instance have I seen a fever which seemed to require such an interpretation, and in view of the fact that twenty-five years have passed since the hybrid name and theory were suggested by Dr. Woodward, a very large mass of testimony ought to be forthcoming in its support, and yet the medical world has not accepted the doctrine as an essential article of faith. Among those who do accept it there is such a contrariety of opinion as to what typho-malarial fever is that we may even hesitate to believe that there is any truth in the doctrine or any well-founded arguments to support it. What is needed on this question is an authoritative collective investigation, and the American Medical Association could do no better work than to order such an investigation by a competent commission which shall sift the truth out of the mass of uncertainty and give some simplicity and definiteness to our knowledge. There is no uncertainty in the facts—it is in our interpretation of them only, and a properly constituted body of investigators may be trusted to act without prejudice and to formulate conclusions which will carry great weight to all impartial minds.

The following conclusions embody the main statements in the above remarks:

1. Enteric fever is a rare disease in the South in a typical or intense form.

2. There is a probable change going on in the type of enteric fever; it is losing its typical character and is assuming a less typical and milder form.

3. Many cases of mild continued fever, which have no well-defined or characteristic symptoms, are cases of mild enteric fever.

4. While malarial continued fevers are found in the South, many so-called cases of "adynamic malarial fever," "remittent fever," etc., are in reality cases of enteric fever.

5. There is no good reason to believe that there is such a disease as typho-malarial fever.

CLINICAL MEMORANDA.

OBSTETRICAL.

Detachment and Expulsion of the Vaginal Portion of the Cervix during Labor.—This rare accident recently happened to a patient in the Maternity Hospital:

A. S., V.-para, aged thirty-four, had a history of difficulty in previous labors, which, with one exception, had been instrumental, partly on account of a slightly contracted pelvis, but mainly because of unusually large children. Labor began by rupture of the membranes; vigorous uterine contractions soon followed; but little progress was made in spite of energetic abdominal action which the woman persisted in exerting with almost every pain. The os dilated unevenly, the anterior lip, nipped between the head and symphysis, remained thick, firm,

Vaginal portion of the cervix detached and expelled during labor.

and unyielding, but was not œdematous. After more than twelve hours of ineffectual uterine and abdominal contraction a fleshy mass was discovered protruding from the vagina; it proved to be the vaginal portion of

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the cervix, lacking a small piece posteriorly. On examination the head was found well down in the pelvic cavity, surrounded by the vaginal walls. The expulsive forces then failing, the child was extracted by forceps. Twenty-four hours after labor a vaginal examination was made. No trace of a cervix could be felt except posteriorly, where a tongue of cervical tissue, about the breadth of a finger and one and a half inches long, projected into the vagina. There was no hæmorrhage during labor nor afterward, and the puerperium has been uncomplicated except for a slight cystitis. At the present time, three weeks *post partum*, the tongue of cervical tissue projects from the median line posteriorly, the entrance to the womb is reduced to its ordinary calibre by cicatricial puckering in the centre of the vaginal vault, and the involution of the uterus has progressed normally.

The dilatation of the os was, no doubt, prevented in in this case by cicatricial infiltration, the result of injuries in former labors. The absence of serious symptoms after an injury of this gravity is remarkable. It speaks well for the asepsis obtained in the Maternity Hospital.

BARTON COOKE HIRST, M.D.,
Professor of Obstetrics in the University of Pennsylvania.

An Anencephalous Twin.—Mrs. H., on May 8th, gave birth to male twins. The first born was well formed, vigorous and healthy, weighing at birth seven pounds. The second was anencephalic, with almost entire absence of the occipital and parietal bones. The hemispheres of the brain were only partially developed and were apparently covered by dura mater.

Both children presented by the vertex and were in separate sacs; their placentæ were united by the edges. The monster was the larger of the two, and, with the exception of the head, was well formed, weighing eight and one-half pounds. The mother ceased to feel motion upon the right side about the beginning of the ninth month of gestation, and the fœtus probably perished about this time. The funis was shrunken and small, and the surface of the body was easily denuded of cuticle. No post-mortem was made, as I desire to present the specimen intact to the Lexington and Fayette Medical Society.

By palpation, at the beginning of labor, both children could be distinctly outlined. By auscultation the fœtal circulation could be heard upon the left side only. The abdomen presented a broad and flat appearance.

Antisepsis was carefully practised in this case, and both the patient and the living infant are doing well. This was the woman's seventh confinement and her first twin labor. Upon the subject of maternal impressions I made particular inquiries, and learned that about the beginning of the fourth month of gestation the patient had been frightened by the attempt of an intoxicated man to enter her bed-chamber. For several days after this she suffered from nervous prostration. But if the shock thus received was the cause of the abnormal development in the one fœtus, why was not some impression made upon the other? F. M. GREENE, M.D.

GREENE DALE, KY.

MEDICAL PROGRESS.

Antiseptic Paste.—SOCIN recommends the following paste to be used in place of other antiseptic dressings on regions where it is difficult to apply a bandage (*Medicinische-chirurgische Rundschau*, May 15, 1890):

℞.—Zinc oxide	. . .	12½ drachms.
Zinc chloride	. . .	75 grains.
Distilled water	. . .	12½ drachms.—M.

This paste should, if possible, be used when fresh. It dries quickly, forming a strong crust which can be still further strengthened by incorporating a small amount of cotton-wool with the paste.

The Treatment of Chronic Bronchitis.—In an instructive lecture upon bronchitis (*Lancet*, May 24, 1890) HARRIS gives the following advice on the treatment of the chronic form:

The inhalation of steam alone night and morning helps the expectoration, but the addition of compound tincture of benzoin, creasote, eucalyptus or carbolic acid in small amounts, adds considerably to the value of this method of treatment. If one drug seems too irritating, another may be tried. The patient must be induced to give this plan a fair trial, but must be directed not to employ the inhalation too long at one time, as faintness may be induced. Here should be mentioned the sprays of various medicaments recommended by Drs. Ringer and Murrell, and used by them with such success. The drug most frequently employed is ipecacuanha wine, either pure or diluted with once or twice its bulk of water. Simple spray apparatus may be used with the ipecacuanha wine, and the patients should be directed to inhale the spray as given off. At first there may be some involuntary resistance to the entrance of the drug into the lungs; but, as the patient gains confidence, it no doubt enters freely into the air vesicles. Instead of the ordinary spray apparatus a steam atomizer may be used. Dr. Murrell claims that with a few sittings, at each of which two drachms or more of ipecacuanha wine are used, the patients are greatly relieved, the shortness of breath and cough are diminished, and good rest at night is obtained. The number of inhalations required in most cases of chronic bronchitis ranges from four to eighteen, and they should be given daily. The effect of ipecacuanha is said to be increase of the secretion. In small doses it depresses blood pressure but little, while it stimulates ciliary action and that of the respiratory centres. Tartar emetic spray (one grain to an ounce of water) has also been used; it produces the same effect as the ipecacuanha wine, but is less satisfactory. Lobelia spray is sometimes employed, especially when there is much spasm. Iodide of potassium spray (two per cent. solution) is also of much use.

Counter-irritants seem to be of great value in chronic bronchitis, and the author has great faith in the linimentum terebinthinæ aceticum (B. P.) well rubbed into the chest night and morning. Others use linimentum iodii, with the idea that it is not only an active counter-irritant, but that it also does good when inhaled, iodine having been strongly recommended as an inhalation in bronchitis.

As regards expectorant and other drugs in the treatment of chronic bronchitis Harris gives the preference to carbonate of ammonium, five grains of the salt with infusion of senega or serpentaria, or with aromatic spirit of ammonia, ipecacuanha wine and compound tincture

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of camphor. Chloride of ammonium is also of much service. Terebene, in the author's experience, gives relief at first, but he has not found it of as much value as carbonate of ammonium. Emetics are often very serviceable in cases with excessive secretion which is not easily expectorated.

Treatment of Profuse Menstruation.—The following prescription for cases of profuse menstruation is quoted by the *American Practitioner and News:*

℞.—Dialyzed ergotin . . . 10 drachms.
Glycerin . . . . 5 "
Salicylic acid . . . . 30 grains.
Distilled water . . . 2½ ounces.—M.

One teaspoonful diluted with three teaspoonfuls of water to be injected into the rectum after stool once daily.

Bougies Weighted with Mercury.—DR. LEOPOLD CASPER uses elastic bougies filled with mercury which he thinks have decided advantages over both metallic and ordinary gum bougies. The weight of the mercury causes them to slip into the bladder with great ease and they possess all the safety of the unweighted elastic bougies.—*Therapeutische Monatshefte*, May, 1890.

The Treatment of Local and of General Peritonitis.—DR. W. E. B. DAVIS, of Birmingham, Alabama, considers that the following facts in reference to peritonitis are definitely settled:

1. Simple peritonitis, when caused by a sufficient quantity of chemical irritant, will produce death by the extent of the inflammation.

2. Simple inflammation may terminate in septic peritonitis, by producing a weakened condition of the walls of the intestines, which permit the passage of septic germs from the intestinal canal into the peritoneal cavity.

3. While pathological germs in small quantity may be absorbed by the healthy peritoneum, without producing a peritonitis, the same quantity combined with a chemical irritant may produce a violent inflammation—the irritant having prevented the absorption of the germs and caused the exudation of a nutrient fluid for their multiplication.

4. Large quantities of septic fluids and microbes always produce suppurative peritonitis; yet, a small quantity of either may be absorbed and destroyed, unless the peritoneum has been weakened by antecedent pathological changes.

5. A septic fluid may gravitate into dependent parts of the peritoneum, and become shut up, either by plastic inflammation, or by a coil of intestine, and thus be prevented from producing diffuse peritonitis, but after a time this may rupture and produce death from general peritonitis.

6. The germs of septic peritonitis will be found in the kidneys and other organs of the body, and in quantities proportionate to the extent and duration of the inflammation.

7. The condition of the peritoneum, and the nature and quantity of the product, will determine the rapidity of the inflammation, which usually ends in from forty-eight hours to six days, but death may be produced from shock in a few hours. Tubercular inflammation is always slow in its progress.

The foregoing principles indicate the following rules of treatment:

(*a*) Promote absorption of the inflammatory products of simple peritonitis as rapidly as possible, and thus relieve the inflammation and prevent the possibility of septic peritonitis.

(*b*) In the early stages of peritonitis, whether simple or septic, where the cause cannot be determined, hasten the absorption of inflammatory products, etc., with purgatives.

(*c*) When medical treatment fails to give relief, septic fluids should be removed by operative procedure.

(*d*) In localized peritonitis, with circumscribed pus formation, the pus should be removed and the abscess cavity drained.

(*e*) In acute septic peritonitis, operative procedure must be adopted early, or there will be no chance of recovery offered by the operation, as the inflammation will become more extensive the longer it continues; and, too, there will be so great a quantity of septic germs absorbed into the system that death will result from toxæmia, even though the local inflammation should be remedied by a late operation.—*Virginia Medical Monthly*, May, 1890.

Ammonium Bromide Fumes in Asthma.—The value of the fumes of ammonium chloride in some varieties of bronchial and naso-pharyngeal catarrh suggested to DR. THEODORE MAXWELL the use of ammonium bromide fumes in the same diseases when complicated with spasm, as is seen in asthma (*Lancet*, May 10, 1890). The ordinary solutions of hydrobromic acid were found useless for the purpose and Dr. Maxwell was obliged to use a strong acid with a specific gravity of 1.7. This, with solution of ammonia, gave abundant fumes. In several patients suffering from asthma a few whiffs relieved the dyspnœa at once. In some cases when used early the inhalations aborted the paroxysms.

As some difficulty in obtaining absolutely neutral fumes with the usual inhalers was experienced, an apparatus was finally adopted in which the ammonium bromide is simply vaporized by heat and drawn through a wash-bottle before being inhaled.

The Treatment of Dysentery in Children.—VEILLARD recommends the following mixture in the dysentery of children:

℞.—Powdered ipecacuanha . . 25 grains.
Boil for five minutes in 3½ ounces of water. Filter and add:
Tincture of opium, from . 2 to 4 drops.
Cinnamon water . . . 3 drachms.
Syrup of orange flowers . . 6 " —M.

Dose, for a three-year-old child, one dessertspoonful every hour, or at longer intervals if nausea is produced. To quiet tenesmus enemata containing tincture of opium, or enemata of infusion of chamomile or of eucalyptus flowers, should be used.—*Annals of Gynæcology and Pædiatry*, May, 1890.

Pilocarpine in Deafness.—MR. GEORGE P. FIELD reports a series of eighteen cases, diagnosed as labyrinthine

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deafness, treated with pilocarpin. In all of these cases the improvement was marked. The cases which derived the greatest benefit from the treatment were those in which bone conduction was the least. A few cases of middle-ear deafness were also somewhat improved.

The author states that the pilocarpine was given hypodermically but does not state the dose nor the frequency of its administration.

Prescription for the Expulsion of Lumbricoid Worms.—According to the *Annals of Gynæcology and Pædiatry* the following is DUJARDIN-BEAUMETZ'S prescription for the treatment of lumbricoid worms:

℞.—Tincture of kameela . . 1½ drachms.
Syrup of orange-peel . . ½ ounce.
Water, sufficient to make . 4 ounces.—M.

This should be taken in small doses at short intervals until all has been used. If the worms are not expelled within two hours after taking the last dose castor oil should be administered.

Formulæ for the Administration of Condurango.—KRAUS, of Vienna, who uses condurango as a stomachic gives it in the following combinations:

℞.—Extract of condurango . . 30 minims.
Chloral . . . . . 15 grains.
Syrup of orange . . . 5 drachms.
Distilled water . . . 4½ ounces—.M.
Dose, from three to six tablespoonfuls daily.

Or,

Condurango bark . . 5 ounces.
Hydrochloric acid . . 15 minims.
Elixir of orange . . . 2½ drachms.
Syrup . . . . . 5 ounces.—M.
One tablespoonful every two hours.—*Internationale klinische Rundschau.*

Quadrangular Sounds for the Treatment of Urethral Stricture.—DR. HAL C. WYMAN has devised a four-sided bougie, with a groove between each angle, which he thinks has several points of superiority over the ordinary instrument (*American Lancet*, May, 1890). A round bougie in passing a tight stricture often severely stretches the urethra longitudinally and not infrequently causes laceration, whereas the quadrangular bougie, presenting less surface for friction, slips through more easily, at the same time dilating the stricture. The grooves between the angles insure the presence of the lubricant where it is most needed, and, moreover, by means of them medicaments can be applied to the urethra.

Asepsis of Urethral Instruments.—PICARD (*Gazette des Hôpitaux*, No. 28, 1890) writes that a clean aseptic bougie or catheter, no matter how often employed, never occasions cystitis, urethritis, orchitis, urethral abscess, or urinary fever. To this should be added—provided the urinary tract be not previously infected.

Respecting the means to be employed to secure asepsis, the author confines himself to those easily adopted by the general practitioner. Metallic instruments are most easily disinfected. Boiling in simple water or in salt water is regarded as giving practically the necessary guarantees. Boiling in strong carbolized water is preferable, but often impracticable. Soft or semi-soft instruments require greater care. The soft, red, Nélaton catheter is easily disinfected by dipping for a few seconds into boiling water, or it may be kept in a strong antiseptic solution, such as a five per cent. carbolic acid or a 1-to-1000 sublimate solution. It is recommended to wash the instrument either in boiling water or boric acid solution before using. After boiling, the instrument may be taken up with clean forceps and placed in a jar containing a saturated solution of boric acid. A thread previously fastened to the end of the sound is slipped into a slit in the cork, and the sound thus suspended can be readily withdrawn without handling when needed. Semi-soft catheters and bougies are not so easily sterilized. They should be placed in tubes closed with absorbent cotton. The tube is then placed in boiling water and allowed to remain for half an hour. During this time this heat will sufficiently sterilize the tubes. It will be more prudent to repeat this process several times at intervals of twenty-four hours, for while this temperature destroys bacteria it is without effect upon the spores.

Before passing a bougie or catheter the hands of the physician should be thoroughly cleansed and rendered aseptic. The meatus and glans penis of the patient should be washed with a sublimate solution or with hot water. If the urethra is already infected it should be washed out with a saturated solution of boric acid. For lack of these precautions a more or less acute cystitis has been again and again set up.—*Journal of Cutaneous and Genito-urinary Diseases*, May, 1890.

Drainage Water from Cemeteries.—DR. E. VON ESMARCH (*Zeitschrift für Hygiene*) has examined the question of the dangers of contagion through the drainage from cemeteries. His experiments show that where bodies are placed in water or buried, the earth or water surrounding the bodies does not become contaminated with germs. He finds that in the case of death from anthrax the bacilli in the body very quickly die. He concludes, with several other German observers, that the proximity of cemeteries and the drainage water from them have no influence in the spread of epidemic or contagious diseases. He unfortunately does not tell us whether the typhoid bacillus meets with the same fate as that of anthrax.—*Brooklyn Medical Journal*, June, 1890.

Filaria Sanguinis Hominis.—At a recent Intercolonial Medical Congress of Australia DR. BANCROFT announced some of the results of his studies of filaria. He thinks that probably all filaria, whose embryos circulate in the blood, require for their distribution the intervention of some blood-sucking animal, such as the mosquito, sand fly, louse or flea, all of which should be studied. The larva of filaria immitis are often found in dogs, and the embryos are found in the lice infesting such dog.

Dr. Bancroft was the first to discover filaria sanguinis hominis in Australia (1876). The filariæ were found in an abscess of the arm in a butcher's boy, embryos being found in the blood. Since then other cases have been observed. The author thinks that one of the modes in which the parasite may prove injurious is by invading the heart and causing thrombosis. They may also produce emboli.—*Medical Chronicle*, June, 1890.

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SATURDAY, JUNE 14, 1890.

THE INFLUENCE OF MATERNAL HÆMORRHAGES UPON THE VITALITY OF THE FŒTUS.

MANY investigators have studied the effect of certain maternal conditions upon the life of the fœtus, and both experiments and clinical observations have established some facts of great practical importance. Thus, it has been shown that a sudden elevation of temperature to 105°–106° is usually fatal to fœtal life, while even 108° gradually reached has been apparently harmless. The ill effects of emotion and maternal impressions have often been disputed, but an interesting paper by Fordyce Barker would seem to establish the fact that profound maternal impressions in some way influence the growth and development of the fœtus. The danger to fœtal life of poisons in the maternal blood has been carefully investigated, and no one denies that eclampsia, lead-poisoning, the saturation of the blood with bile salts, and infectious diseases in the mother frequently cause the death of the fœtus. It is also well known that death of the fœtus is very probable when the mother is affected with any chronic disease rendering her nutrition so defective as to induce a condition of marked anæmia. It is in this way that the pernicious vomiting of pregnancy destroys the vitality of the fœtus.

At a recent meeting of the Société de Biologie, MM. CHARPENTIER and BUTTE reported the result of a series of experiments made to determine the effect of hæmorrhage of the mother upon the vitality of the fœtus. Gravid rabbits, near term, were immersed in a six-tenths of one per cent. saline solution, the abdomen and uterus being opened in such a way that the condition of the fœtus and the umbilical circulation could be observed. The rabbits were then bled, and the results led to the following conclusions: When the hæmorrhage is sudden and profuse enough quickly to cause the death of the mother the fœtus will survive if it is immediately extracted. If the loss of blood is gradual, yet sufficiently great to cause death eventually, the fœtus will die a short time before the mother. Finally, if the mother survive a severe hæmorrhage the fœtus will die about an hour after the appearance of the hæmorrhage.

These observers attribute the death of the fœtus before that of the mother to the disappearance of a part of the oxygen of the maternal blood, to the diminution of the total amount of oxy-hæmoglobin, and also to the diminished blood-pressure which impairs the umbilical circulation. The supply of oxygen to the fœtal structure is thus insufficient for the purpose of carrying on the functions. These experiments are of practical value and offer suggestions which may be applied to cases not infrequently met with, and will, no doubt, lead to the saving of life. Examples of serious hæmatemesis, hæmoptysis, and epistaxis in the latter months of pregnancy are by no means rare, and the further history of such cases is the birth some weeks later of a macerated fœtus which has evidently been dead for some time. It would seem from these experiments that the death of the fœtus in such cases is directly dependent upon the hæmorrhage of the mother. If this be the case in obstetric practice the indication is plain to induce labor as soon as such a hæmorrhage makes its appearance, with the purpose of saving the child's life. Since the introduction of incubation and *gavage* in the management of premature infants, and the happy results of their employment—twenty-two per cent. of the infants saved at six months, eighty-nine per cent. at eight months—this plan of extracting the child when a severe hæmorrhage has occurred after the sixth month would appear both desirable and justifiable.

THE MICRO-BIOLOGY OF RHEUMATISM.

IN *La Médecine Moderne* of May 21, 1890, is a communication by DR. BORDAS upon some micro-biological researches on acute articular rheumatism,

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which while they cannot be considered absolutely conclusive are nevertheless exceedingly interesting as an earnest of what further investigation in this line may bring forth. It is but a few years since malarial fever was a reproach to the practical physician in that he could not state the manner in which this disease was cured by quinine. Through the discovery of the malarial germ of Laveran and the additional knowledge that quinine exercises a germicidal effect upon this organism, this stain upon the fair name of rational medicine has been removed, and the contribution of Bordas is important as forming what may perhaps be a prelude to the removal of the other reproach to medicine, viz., the cause of rheumatism and the manner in which salicylic acid does good in this disease. This is not the place to detail all the experiments of the investigator whom we have named, and we can do no more than give his conclusions, which are as follows:

He asserts that the bacillus which he has isolated, when injected into the carotid artery of a rabbit, produces endocarditis with vegetations upon the valves.

That acute articular rheumatism with its complications may be considered as a disease produced by microbes analogous in their production, for example, to the micrococcus pyogenes.

This investigator is also certain that the germ which he has isolated is a specific one. The research was carried out under the directions of Professor Germain-Sée, and if further studies confirm the ones just quoted, another advance in the study of disease will have been made.

REVIEWS.

REPORT OF MEDICAL EDUCATION, MEDICAL COLLEGES, AND THE REGULATION OF THE PRACTICE OF MEDICINE IN THE UNITED STATES AND CANADA, 1765 to 1890. By JOHN H. RAUCH, Secretary of the Illinois State Board of Health. Springfield, Illinois, 1890.

WE are glad to notice in the columns of THE MEDICAL NEWS the appearance once more of the publication issued by the Illinois State Board of Health upon this most important subject. Elsewhere the writer of this review has alluded in terms of the highest praise to the work which Dr. Rauch and the rest of his Committee are constantly performing.

Although we are, as a nation, proud of the boast that one State can have but little influence upon the United States, we have in this report an evidence that by proper legislation one State can influence the educational centres not only of the United States but also of Canada.

The enormous amount of labor required in the compilation of the statistics given us by the distinguished statistician who edits these reports, can be conceived of by no one who does not thoroughly examine its contents. The State of Illinois puts into the hands of every regular practitioner of medicine the means by which he can stop the practice of any illegal practitioner at any time through the discovery of the standing of the school from which he claims to be a graduate, and puts every man, woman, and child under a debt of gratitude for its influence upon medical education on this continent.

CORRESPONDENCE.

LONDON.

The Recent Epidemic of Influenza. The Relation of Salicylic Acid to Uric Acid and Acute Rheumatism. The London Post-graduate Course.

To the Editor of THE MEDICAL NEWS,

SIR: The epidemic of influenza being now virtually at an end, it may not be uninteresting to glance briefly at some of the facts in connection with it. The main effects of the outbreak were felt during the first two weeks in January, but the disease was in full swing during the entire month as well as during the first week in February. It is quite impossible to obtain acurate statistics for the whole metropolis, but some idea of the number attacked may be gained by reference to the statistics of St. Bartholomew's Hospital; I must premise, however, that there is some reason for thinking that more cases were met with in this hospital than in others, possibly owing to its situation. During the first two weeks of January the number of medical patients was 3612 and 3397 respectively, and the weekly average for the whole month was 2682, the average of the preceding five years being 1530; it was estimated that about two patients out of three, or at least considerably more than one-half, were suffering from influenza. It was also estimated that during the three weeks of prevalence over 6000 cases were treated at this hospital. On the other hand, at the Hospital for Sick Children, Great Ormond Street, which is only about a mile distant, not half a dozen cases occurred amongst the in-patients, and only an inappreciable number amongst the out-patients.

In the General Post-office, where some 13,000 persons are employed, and where the average daily sick list is 250, on one day in January there were no less than 2000 absentees, and this would not necessarily represent every case of the disease, as those who suffered from the milder forms doubtless continued at work. It has been roughly estimated that in London alone no less than 400,000 persons were attacked, an estimate which certainly has not erred on the side of exaggeration.

During the first five weeks of the year the deaths in London exceeded the average number by over 2000, and 378 deaths were directly ascribed to influenza, respiratory diseases being credited with nearly the whole of the remaining excess. Of course in calculations of this kind no account is taken of the minor, but not necessarily trifling effects of influenza, and the number of those who have been left with permanently impaired health must be very considerable. After all, the death-rate in London has remained considerably below that of

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the other principal cities of Europe, so we have not much to complain of.

Dr. Alexander Haig, who has already done much good work in regard to uric acid, has just read a paper before the Royal Medical and Chirurgical Society on the relative effects of salicin and salicylate of sodium in the excretion of uric acid and their value in acute rheumatism. He finds that salicylate of sodium has about thirteen times the excretive power of salicin, and that their action in disease appears to correspond roughly with their action on uric acid secretion. According to him, all methods of treatment that are of any value in acute rheumatism cause an increased excretion of uric acid, and salicin and the salicylates are useful in this disease in exact proportion to their power of producing elimination of this substance. He then proceeds to give reasons for thinking that acute rheumatism is due to uric acid, and he expresses his belief that the uric acid is driven out of the blood by high acidity and precipitated in the joints, and that such precipitation and non-destruction of the uric acid afford the true explanation of the effects of the inflammation and fever of rheumatism. He maintains that owing to the rise of temperature the acidity is greater and the precipitation of uric acid, in the joints is, therefore, more complete in rheumatism than in gout. Other causes that raise the acidity and therefore predispose to an attack of rheumatism are chilling and suppressed perspiration, ingestion of acids and acid-forming foods, and tonsillitis or other local inflammation. He says that high arterial tension at the end of an attack points to an excess of uric acid in the blood, and anything that raises the acidity at this time will cause a relapse.

The second London post-graduate course commenced recently, and like the last will consist of about seventy lectures and demonstrations at the leading special hospitals. To the list of the hospitals which were used in the last course there must be added Bethlehem Hospital, the best known lunatic asylum in London, and one of the Poor-law Infirmaries, where it has been arranged that Mr. Hutchinson will give a series of demonstrations which no doubt will constitute a most valuable addition to the course. I suppose these lectures have not become very widely known yet, for only twenty-nine men joined for the last course, a very small number considering the amount of instruction and material offered to the class.

The Charing Cross Hospital Medical School has been extensively enlarged and will be well equipped now in the way of laboratories and lecture theatres. It is not nine years since the school buildings were erected, and the necessity for such extensive alterations in so short a time speaks well for the prosperity of the school. Nearly all the metropolitan schools, however, in the last ten or twelve years have had to double their accommodations.

NEW YORK.

To the Editor of THE MEDICAL NEWS,

SIR: The rapid advances in the surgery of the brain which are now being made are but the natural outcome of the elaborate and painstaking experiments which have been made by Ferrier and others in endeavoring to penetrate the darkness and solve the mysteries of this wonderful region of the human anatomy. Dr. E. D. Fisher recently added his mite to the physiology of this subject, by presenting to the New York Academy of Medicine some of the results of a series of experiments which he had made upon animals to determine the functions of the cerebellum. He trephined several days prior to the removal of portions of the cerebellum, in order to eliminate errors which might arise from the irritation caused by the trephining itself. He found that superficial lesions did not cause any symptoms, and that when these lesions were sufficiently extensive to cause incoördination, the animals apparently tried to overcome these disordered movements. He exhibited a monkey which dragged the leg on the side corresponding to the lesion, and which held the arm most of the time in a semi-flexed position. The experiments seemed to prove that there was a peculiar cerebellar incoördination.

Dr. W. Gilman Thompson said that he had witnessed many of the experiments, and had sometimes observed extraordinary movements in animals, following simple trephining. One of the great stumbling-blocks in the study of cerebral localization is the way in which recovery takes place after serious injury to the brain; and this is well shown in the present series of experiments. Dr. Thompson said that three varieties of coördination are to be distinguished, viz.: 1. A lower form, controlled by the spinal cord; 2. A higher one, controlled by the cerebellum; and, 3. A still higher variety, due to education, and controlled by certain parts of the cerebral hemispheres, which have not yet been definitely located. When one of these three divisions is injured, it is possible for the other parts of either the brain or cord to be educated to do the work of the injured portion. This does not seem surprising, when we remember that children have to learn first the simple movements of coordination, and proceed gradually to the most complicated ones. Recovery after injury takes place in the same order, beginning with the simpler movements.

In a discussion on the "Complications of Laparotomy," at a meeting of the Clinical Society of the Post-graduate School, the question of the propriety of using drainage-tubes received a good deal of attention. Dr. A. Palmer Dudley was most emphatic in denouncing their use after laparotomy unless pus is found in the abdominal cavity. He thinks the dangers of the use of the drainage-tube are tenfold greater than those arising from an ordinary oozing of blood into the abdominal cavity, and that the tube is not necessary to show the occurrence of a secondary hæmorrhage, as this is more quickly indicated by the condition of the patient. Neither could Dr. Robert T. Morris see any necessity for the use of drainage-tubes, for Nature has provided the large intestine as an efficient drainage-tube, which runs directly through the middle of the "cesspool." He said that the ordinary drainage-tube requires careful and skilled attention; but by the administration of a hydragogue cathartic, Nature's drainage-tube can be made to remove rapidly, by osmosis, the noxious material. Certain German experimenters have shown that large quantities of fermenting liquids may be absorbed by the great lymph-sac—the peritoneum—which are eliminated by the kidneys and intestinal glands. Dr. Charles C. Lee expressed the general opinion of those present when he said that drainage-tubes are oc-

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casionally extremely useful, if not indispensable, but that the progress of the profession in laparotomy has shown that they are rarely necessary, and certainly did harm if indiscriminately or extensively used. Dr. J. R. Nilsen called attention to the difficulty sometimes experienced in finding the linea alba, owing to its deviating an inch or more from the median line; and he advised making a careful examination with reference to this point, prior to the operation. When dealing with intestinal adhesions, which do not yield to gentle manipulation, his rule is to enlarge the incision and to work by sight. This, he said, greatly simplifies the operation and yields better results.

A paper by Dr. C. L. Dana, entitled "A Study of Alcoholism in the Bellevue Cells," excited a general discussion among the alumni of Bellevue Hospital, which was also participated in by several neurologists and alienists. The paper stated that, annually, three thousand cases were confined in the "Bellevue cells," and that three-fourths of this number were males varying in age from twelve to seventy years. Fully one-half of these unfortunates are of Irish birth, and the preponderance of Irish parentage among the native-born is very great. These facts, he thinks, are especially serious in view of the well-known fecundity of the Irish race. The period when delirium develops is usually about twenty-four hours after admission, and is due to the withdrawal of the accustomed stimulant and to general starvation of the nervous tissues. It usually lasts only a day or two; but when it continues for two or three days, about five per cent. of the cases die of exhaustion. A glance at the annual number of deaths for the past four years shows that it has increased nearly seventy per cent., while the annual number of cases has only increased from three thousand to thirty-six hundred. The great mortality this year is partly due to the epidemic of influenza, and its complicating pneumonia. Appalling as these figures are, they could be much improved if we could prevent the sale of cheap liquor and abolish the "treating" and credit system. Cheap whiskey is freshly distilled, and contains much amylic alcohol, which is eight times more poisonous than ethylic alcohol.

Dr. Matthew D. Field then read a paper on "Inebriety." He believes that the present treatment of inebriates is radically wrong, and that dipsomania is a physical disease; hence the treatment, to be successful, should be in conformity with this view. He incidentally touched upon a social problem of much interest when he referred to the effect of poor ventilation in predisposing to drunkenness, and he cited, in support of this statement, the experience in England with a certain class of trades-people who were notoriously intemperate until their lodgings and workshops were put in a more healthy condition, when drunkenness was notably decreased. Imprisonment of the inebriate does not cure him, as is well shown in the case of a certain woman who was sent to the workhouse twenty-eight times in twenty-five months. In discussing this paper, Dr. J. West Roosevelt thought that the increased annual number of cases of alcoholism can be explained by the more than proportionate increase in the population. It is, he said, very difficult to regulate the quality of liquor sold, although there is much need for reform in this direction. He has seen many cases of alcoholism, especially the febrile ones, which simulated poisoning by the essential oils.

Mr. Clark Bell, President of the Medico-legal Society, in discussion, said that owing to the peculiar laws with reference to drunkenness in Boston, that city has the largest number of criminals in proportion to its population of any city in the world; and as a similar state of affairs exists in New York, it partially accounts for the large number of cases cited by Dr. Dana. At the present time, both the medical and the legal professions are pretty generally agreed that there is a disease called inebriety, which causes one to lose control of his conduct.

Dr. F. H. Ingram reported a collection of statistics which embraced information gathered from every nation. These statistics show, among other things, that apple brandy, or "Jersey lightning," is the most potent of all alcoholic beverages in producing mental derangement; next in order comes hard cider; then brandy and whiskey; then white wines; and, lastly, the red wines.

CURIOSITIES OF HOMŒOPATHIC PHARMACY.

To the Editor of THE MEDICAL NEWS,

SIR: Having recently obtained a copy of the circular and price-list issued by a dealer in high potencies residing in New York City, I desire to impart to the profession some of the information therein contained. This document is a printed pamphlet of thirty-two pages, and is entitled "Catalogue of Morbific Products, Nosodes, and other Remedies in High Potencies." These remedies are for sale by Samuel Swan, M.D., at No. 13 W. 38th Street, N. Y.

Glancing over the catalogue, we were struck, on page 16, by one article of the materia medica kept for sale, and called "Luna, or Moonlight." How in the world is this obtained, and what are its properties? Astronomers have long disputed whether the rays of the moon possessed any heating power, but why need they any longer be in doubt, when moonlight may be bought by the vial-full, and can be seen and tasted by ordinary mortals.

On page 20 we find three species of pediculi on the list of remedies to be dispensed, namely, the pediculis pubis, pediculis capitis, and pediculis corporis. These minute insects we only expect to find on uncleanly persons, and the idea of swallowing them, or a preparation made from them, no matter how dilute, is rather startling to the uninitiated. The pediculis corporis, by the way, has a note in brackets stating that this special lot came from Boston. The inquiry, then, arises in our minds, Why is this? Are the Boston pediculi more voracious, or of larger size than those of other cities? What is the cause of their superiority? Unfortunately, the vender of these delectable preparations does not condescend to inform us upon these points, so we are compelled to remain in ignorance.

On page 1 we find on the list the name "acarus scabies" translated "lice insect." As the acarus mentioned is the one found in the disease known in common parlance as the itch, and is not the pediculis, there seems to be a (H)itch in the Latin; but such trifles need never daunt the swallower of preparations like these.

There is on the first page one familiar remedy, viz.:

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adeps anserina—goose-grease. How well do we remember the vile odor of this substance when applied externally to the neck in our youthful days. Never did we imagine we should see it prepared in "high potencies," and given in granules.

On page 15, "lachryma filia" are defined as "tears from a young girl in great grief and suffering." In ancient Rome small crystal or glass flasks have been found called lachrymalia, which are said to have contained the tears of mourners. Were these lachryma filia obtained from such sources, or are they the tears of some modern damsel; mourning, perhaps, like Miss Flora McFlimsey, because she had nothing to wear, or in utter desperation from the lack of a spring bonnet; or, it may be, crossed in hopeless love?

The explanation of "flavus irides," on page 11, is "yellow ray of the spectrum." Here is bottled sunshine with a vengeance! Photographers have long desired to fix the fleeting rays of the sun, and to make their pictures glow with the colors of nature, and here we have the rays prepared and fit for internal medication. Would that we knew the secret of this preparation! One thing is certain, if we *must* swallow globules it would be much pleasanter to think of swallowing bottled sunshine than a preparation of pediculis corporis, even though it came from Boston.

On page 6 we find "carbunculus on neck (Swan); very severe." We are not told whether the carbuncle was very severe upon the swan, or whether the pus obtained from it is very severe upon the unlucky patient who takes it—perhaps both statements may be true.

"Fel gryllus Americana" (page 11), or "Brazilian cricket," is said to be beneficial for "suppression of urine with or without pain," and this important fact is also stated, that "a boy who had chills and fever swallowed a live cricket, and never had a chill afterward."

On the first page several dainties are provided for lovers of preparations of the high potencies. One is "adenia," or "glands from a person suffering from Hodgkin's disease," a little further on is the "ailanthus bug," an insect found on the odorous though unfragrant ailanthus tree. On the same page "albuminuria" is defined as "renal albumin," or, in other words, the putrid and disgusting products of the decomposition of the human body, as found in diseased urine.

On page 2, "anthracin" is said to be "pus from a carbuncle." On page 4 is "burboin syphilitica," or "pus from syphilitic buboes." On page 5 are a number of preparations of "calcarea" from different parts of the body, as "calcarea renalis," or "stone of the kidney," and "calcarea from the lungs and bladder." On page 6 we have three preparations to choose from, made from different varieties of catarrh, namely: "catarrh of the intestines," "catarrh of the bladder," and "catarrh of the nose."

Page 7 gives us a little hope that we may not be called upon to swallow any more such vile compounds, for there we find "cerulia irides" defined as "blue ray of the spectrum," but, as if to dash our newly found hopes to the ground, immediately beneath is given a preparation made from the "chancre of syphilis."

Page 8 gives a remedy for constipation in newly born infants, viz., "colostrom, found in their intestines previous to and after birth." Page 9 gives preparations of two varieties of poisonous snakes, viz., crotalus horridus (rattlesnake) and crotalus cascavella. On the same page is "crusta lactea," commonly called "milk crust," and found on the heads of sickly or uncleanly babies. Further down, on the same page, are preparations of diabetes mellitus, and also of the serum found in cases of dropsy.

Pages 10 and 11 give us preparations entitled "electricitas, or electricity," and "galvanismus, or galvanism." It has been said of our countryman Franklin that he brought down lightning from heaven for the service of man, but our homœopathic brethren can do more, they can make it edible and drinkable for ordinary mortals.

But time fails me, and I can only enumerate a few of the choice morsels obtainable in the high potencies: "hippozinine," a preparation from glanders; "lyssin," from hydrophobic patients; "osteo-necrosis," from necrosed or dead bone; "pus from abscess of rectum," from "caries of heel," and from septic abscess.

Page 22 gives us "rubrum irides, or red ray of the spectrum," completing the list of rays of light used in the manufacture of these globules. On page 23 we find four varieties of cancer served up to us, viz., cancer of the breast, uterus, bowel, and face.

Page 25 seems to show that Dr. Brown-Séquard's so-called Elixir has been anticipated, for we there find two preparations: one "testiculo gallinæ," or "testicles of the fowl," and "testiculo muliebris sinistra," from the left ovary of a woman.

Many other preparations might be given, but I will conclude by giving an extract from the note after page 30. Dr. Swan says that the plan of sending grafts has been adopted, viz., "If a graft is put into a vial filled with unmedicated pellets, and corked, the whole mass will be medicated in half an hour." Further down, on the same page, he says: "When a vial of medicine is nearly emptied, fill it with unmedicated pellets, and you will not have to purchase the remedy a second time."

"Can the farce of humbug further go?"

ROBERT REYBURN, M.D.,
Professor of Physiology and Clinical Surgery in the Medical Department of Howard University.
WASHINGTON, D. C.

GYNECOLOGICAL ELECTRO-THERAPEUTICS.

To the Editor of THE MEDICAL NEWS,

SIR: In the issue of THE MEDICAL NEWS for May 10, 1890, I find an article on "Gynecological Electro-therapeutics," by Horatio R. Bigelow, M.D., in which he refers extensively to an article of my own, on "Electricity in Chronic Pelvic Inflammatory Diseases," which appeared in your issue of March 22, 1890. The vital points I made in my paper were that electricity never actually cured chronic pelvic troubles, and that the most it could do was to relieve the symptoms temporarily and leave the diseased tissue, which at some future time would again develop acute symptoms. My object in again burdening your readers with this subject is to call attention to how thoroughly Dr. Bigelow corroborates my statements as made on that and other occasions, although his paper is an apparent criticism of my position; or, at least was meant to be such. Dr. Bigelow

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has now been in constant attendance at Apostoli's clinic for about one year, and in speaking he gives not only his own opinions, gained from his personal observation, but reflects the opinions of Apostoli—opinions based on an experience in gynecological electro-therapeutics second to none in the world. Dr. Bigelow says, "I have *never* seen a pyo- or a hydro-salpinx anatomically cured. There are many of these cases which should never be electrically handled. Dr. Apostoli, my master, has never claimed in his writings that he cured these cases anatomically." And again, "some conditions of salpingo-ovaritis may be *symptomatically* cured."

This is exactly what I have claimed, and nothing more.

Now, in spite of this personal experience, Dr. Bigelow, in speaking of those gentlemen who claim to cure these diseases *anatomically* with electricity, thinks that "the word of any professional brother who has carved out for himself recognized standing must be accepted without the shadow of a doubt." He further observes, "If Dr. Goelet says that he has dissipated these adhesions, I cannot conceive why we should not accept his statement, although clothed in poetic language. The science must go forward or backward, it cannot stand still, and improvements will be made upon Apostoli's plan by his disciples as experience and knowledge increase, so that you will have more extended results in America than here. . . . I have not seen a case of chronic adhesions absolutely cured anatomically, but I am quite ready to believe that it is possible." In this, as in many other articles lately written, those of us who do not believe that electricity will *cure* these diseases, are reproached for throwing discredit on the honesty of our opponents. This is not true, however, and is simply begging the whole question. We give all due credit to their honesty and know full well that they believe what they say about this remedy and the results of its use. There is room for a great difference of honest opinions on most medical subjects, and this is no exception to the rule. The difficulties of accurate diagnosis in pelvic inflammatory diseases are so great that we claim little in that direction which we do not grant to our opponents. It is here that we think these gentlemen are at fault and where they go astray, and this could easily be proven by numbers of individual cases were it necessary. Now, if Apostoli and Bigelow fail to obtain the cures claimed by their disciples and I also fail after repeated and prolonged trials, is it reasonable to suppose that I will accept without question the statement of other men when they say they have obtained these cures, especially when I go to some of these same men and ask to see a case cured by them, and when after several years of constant observation they fail to show me a single cure, although in the meantime they are constantly talking of the cures they have made? I repeat, are we not bound under these circumstances, in the interest of science, to refuse to accept their results unless accompanied with the most convincing proof? I can say, with Dr. Bigelow, "I have not seen a case of chronic adhesions absolutely cured anatomically," but there he and I must part company on this road, for in spite of all the claims made by others, I am thoroughly convinced that it is impossible to cure them with electricity.

J. M. BALDY, M.D.

330 SOUTH SEVENTEENTH ST., PHILADELPHIA.

SHORT-WEIGHT QUININE CAPSULES.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of May 3d there appeared a letter from Professor V. C. Vaughan, of Ann Arbor, on "Short-weight Quinine Capsules." In this letter a detailed description of our tin boxes of 100 filled capsules, labels, etc., is given, together with an analysis of contents of four boxes (of formula No. 106: Quinine sulphate 3 grs., capsicum ⅓ gr.), to which *his attention had been called*, showing shortages in the capsules. Dr. Vaughan's analyses indicate that boxes 1 and 2 contained no capsicum, a defect not noticeable in boxes 3 and 4. Our tins of 100 Elastic Filled Capsules are sealed with tinfoil before leaving our house, and we have direct knowledge that the first two boxes which were submitted to Dr. Vaughan were *not intact*. The Detroit jobber to whom these goods were sold finds it inconvenient to furnish us with the name of the purchaser, and Dr. Vaughan is disinclined to give any information, except such as relates directly to his analysis.

As the formula in question is not frequently called for it was fortunately a matter of no difficulty for us to trace the date of manufacture of this particular order, which was prepared during the rush of the grippe season by additional help specially employed for such work. As it happened, the identical employé who filled the goods in question was soon after detected in shortage work. Whether this shortage work was due to intentional carelessness is a question we reserve for discussion at a later date and in another place. But we do not reserve mention of the use which has been made of Professor Vaughan's letter. Hardly had it appeared in your columns before our Chicago agent apprised us of the fact that one of our competitors located in Detroit was distributing with liberal hand a circular containing an extract of the article above mentioned, and was using it against us. The fact bears its own comment. If they believe that this sort of tactics will do them any good they are welcome to the profit and the honor that are in it. Let them make the most of the above-outlined occurrence. We content ourselves with calling attention to their proceeding, and we give them fair warning that we shall hold them strictly accountable for any inference they may attempt to cast on our goods, outside of the capital they can make out of the aforesaid occurrence, which fortunately we are able to trace and account for.

We can state that our trade on filled capsules has been increasing most rapidly, especially so since we have recently placed our capsules directly before the medical profession through our representatives or by means of direct correspondence, and this has doubtlessly raised the ire of our competitors, who no doubt think that they alone should have the undivided attention of the profession. We make over 125 standard formulæ of filled capsules. Of these there are only seven which contain medicine in dry form. The rest, containing fluids, are filled by a machine invented by us and especially designed to secure as absolute exactness in filling as is possible. However, our professional friends require no assurance that our goods are all that is claimed for them and we are content to leave our friends to determine in the present criticism just where the shoe pinches.

Respectfully,

DETROIT, May 28, 1890. THE MERZ CAPSULE CO.

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A DEFENCE.

To the Editor of THE MEDICAL NEWS,

SIR: Your representative has called our attention to Dr. Austin Flint's letter, published in the issue of your journal of May 3d, and, although our intention was to pay no attention whatever to such plausibly malicious attacks, based on private motives, we address you at the special urgence of a number of our friends in the medical profession, and trust you will kindly give space to our reply.

In referring to members of the alumni of Bellevue Hospital and other medical colleges, it should be clearly understood that each physician referred to by us as endorsing "Vin Mariani" has given us full authority to do so. Upward of 7000 letters bearing physicians' signatures can be seen any time at this office, having been purposely and kindly given us to aid in the further introduction of "Vin Mariani," it being well known that such advertisements are confined exclusively to those channels recognized and approved of by the severest code of ethics, and a method which we are justly proud to boast has, during thirty years, won for "Vin Mariani" the most thorough approbation and appreciation of the entire medical profession.

We are to infer from Dr. Austin Flint's letter that, owing to our recent publication, he intends to discontinue the use of "Vin Mariani;" this he is, of course, at perfect liberty to do; but we positively assert, both himself and his eminent father have for years ordered "Vin Mariani" for use in their own family, as well as very largely for their patients, and this we can and will attest by prescriptions and letters bearing the name, "Austin Flint, M.D.," which we hold subject to inspection. We doubt that any reputable practitioner would, from a personal motive, withhold from his patient a preparation which he has prescribed in the past, and which practical testing for years has proved to be a valuable therapeutic agent, and we may be permitted to state that no recognized medicinal preparation has received stronger endorsement at the hands of the medical profession than "Vin Mariani." Incidentally we call attention to an article published on the same date as was Dr. Flint's letter, in *The Journal of the American Medical Association*, by Dr. Charles E. Sajous, in which "Vin Mariani" receives the highest commendation (see page 645).

Respectfully yours,

MARIANI & CO.

NEWS ITEMS.

Myopia of Schools.—Dr. Kirchner, of Berlin, has investigated the causation of myopia as shown by the pupils at two of the largest gymnasia in the city. One of these schools is old, badly constructed, and poorly lighted. The other is a new building designed with special reference to good illumination. Dr. Kirchner found that, at the old school, short-sightedness increased progressively from the lowest class up to the highest, whereas in the new building it did not begin to increase until the middle classes were reached.

Medicine in Siam.—A new medical mission has been opened at Rathboree, Siam, the third city in importance in the kingdom. The former Prime Minister has presented a large brick station, well built and very conveniently located.

The Chair of History of Medicine.—Dr. A. B. Lyman has been elected to fill the newly created Chair of History of Medicine in the University School of Medicine at Baltimore.

Medical Education of Women in Austria.—A petition has recently been presented to the Austrian House of Deputies, asking for the admission of women to the philosophical and medical faculties of the universities of the empire. It is stated that the petition was signed by 4812 people, including many leading representatives of literature, art, and science.

Progress of Cremation.—The new cremation furnace of Paris at the cemetery of Père la Chaise, has been used 735 times in its first four months of operation. Of this number, 35 only were at the request of surviving relatives; by far the greater number were unclaimed bodies of those who had been drowned, and stillborn children.

The Senate of Hamburg has authorized the construction of a furnace, with columbarium, at a cost of $19,000. The funds will be collected by a local society which has been in existence for several years and working quietly in favor of cremation.

The cost of cremation appears to have undergone a marked reduction. The Paris correspondent of the *British Medical Journal* writes that at the new crematorium, above referred to, the expense for each firing is placed at three francs instead of thirty-five francs as in the case of the older establishment. Coke is the fuel employed at the new furnace.

Medical Missions.—The Edinburgh Medical Missionary Society will celebrate its jubilee anniversary in 1891 All of its orginal board of directors save one are dead. At home it controls the Livingstone Dispensary and Training Institution, caring for 10,000 patients yearly. Abroad, it has branch institutions or missions in India and Palestine, with more than sixty physicians and surgeons. In 1860 there were only 14 qualified medical men in the foreign field; now there are 280, of whom 37 are female physicians. In China there are 82 medical missionaries, a majority of whom are from the United States. There are mission hospitals and dispensaries in several of the principal cities, and they get a considerable portion of their financial support from the better classes of the Chinese, who highly appreciate the work, or at least the medical side of it. The Hangchow Mission, in its last annual report, shows that it ministered to 9,000 patients with 24,000 treatments; the number of in-patients was 550.

Artificial Musk.—The *Journal of Pharmacy* of Alsace-Lorraine states that a very powerful musk has been made artificially by a distillation of toluol with the chlorides of aluminium and butyl. So far as the use of musk in perfumery is concerned, it is stated that the natural article will sooner or later be supplanted by the artificial. As to the medical employment of musk, at the present time it is very restricted, and, indeed, hardly exists. If the

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natural musk shall become a cheaper and less adulterated commodity, it may again be used in medicine, especially in adynamic diphtheria, for which Dr. Jacobi has found it sometimes valuable.

Bayonne, New Jersey, Hospital.—A new hospital has been established at Bayonne, New Jersey, having a capacity of forty beds. It has been furnished with all the new and most approved appliances that can be made available in a small hospital.

Physiology at Vienna.—After the retirement of Professor Ernst von Brücke from the chair of physiology in the University of Vienna, which will take place at the end of the present scholastic year, there will be two professorships provided for this branch of instruction. According to the *British Medical Journal*, this new departure has been rendered necessary by the fact that the classes have become too large to be satisfactorily managed by one professor.

Medical Progress in the East.—A medical college has been established at Antananarivo, the capital of Madagascar, in connection with a Norwegian missionary enterprise. There have already been graduated a number of well-trained native physicians, whose lives will be spent in distant provinces which European missionaries have not yet been able to reach. A new hospital, at the college, will soon be added to the advantages of the Norwegian station. The Society of Friends, of England, has, at the same city, an extensive medical mission under the supervision of Drs. Fenn and Moss.

"Doctor Pascal."—It is stated that the last book of Emile Zola, entitled *Doctor Pascal*, was in part founded on the unfortunate family history of the celebrated physiologist, Claude Bernard, who said of himself that he was "the martyr of marriage."

The Delta Sign in Prescribing.—The *Western Druggist* notices a tendency on the part of certain physicians to employ the Greek delta as a symbol for the drachm in prescriptions.

Obituary. — Dr. Samuel Rush Haven, formerly of Chicago, died, in his sixty-fourth year, at Joliet, at the house of his brother, Professor Dwight Haven, on May 5th. He was eminent in surgery, and in the late war was staff surgeon to Generals Hancock and Grant. He was a native of Sheridan, N. Y., and was an alumnus of the Rush Medical College, from which he was graduated in 1850.

Corrigendum.

ASEPTIC MIDWIFERY.

In THE MEDICAL NEWS, May 24th, page 577, it was incorrectly reported that Dr. T. B. Greenley advocates antiseptic douches during and after labor. Dr. Greenley discountenances the use of vaginal douches in labor and during the puerperium.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 3 TO JUNE 9, 1890.

DIETZ, WILLIAM D., *Captain and Assistant Surgeon.*—Is granted leave of absence for one month.—Par. 4, *S. O. 131, A. G. O., Washington, D. C.*, June 5, 1890.

By direction of the Secretary of War, WILLIAM D. DIETZ, *Captain and Assistant Surgeon*, having completed at New York City the duties assigned him in Special Order No. 29, April 30, 1890, Division of the Pacific, will return to his station in that Division.—Par. 5, *S. O. 129, A. G. O., Washington, D. C.*, June 3, 1890.

By direction of the Acting Secretary of War, leave of absence for seven days, to take effect upon the final adjournment of the Army Medical Examining Board, is granted HENRY MCELDERRY, *Major and Surgeon*—Par. 7, *S. O. 127, A. G. O., Washington, D. C.*, May 31, 1890.

By direction of the Secretary of War, leave of absence for six months, on surgeon's certificate of disability, is granted PETER J. A. CLEARY, *Major and Surgeon.*—Par. 4, *S. O. 127, A. G. O., Washington, D. C.*, May 31, 1890.

With the approval of the Secretary of War, leave of absence for ten days is granted CHARLES WILLCOX, *First Lieutenant and Assistant Surgeon.*—Par. 16, *S. O. 126, A. G. O., Washington, D. C.*, May 29, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING JUNE 7, 1890.

KITE, I. W., *Passed Assistant Surgeon.*—Detached from Naval Hospital, Pensacola, and ordered to Hospital, New York.

CRAIG, THOMAS C., *Passed Assistant Surgeon.*—Detached from Naval Hospital, New York, and ordered to the U. S. S. "Vesuvius."

ANDERSON, FRANK, *Passed Assistant Surgeon.*—Granted leave of absence for the month of June.

OGDEN, F. N., *Assistant Surgeon.*—Ordered for examination preliminary to promotion.

WHITE, S. S., *Assistant Surgeon.*—Ordered for examination preliminary to promotion.

BEYER, HENRY G., *Passed Assistant Surgeon.*—Ordered to duty on the U. S. S. "Yantic."

SIMONS, MANLY H., *Surgeon.*—Detached from Widow's Island Hospital, and placed on waiting orders.

HAWKE, J. A., *Surgeon.*—Ordered to Widow's Island Hospital and attending officers of Navy and Marine Corps at Portsmouth, N. H.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FROM MAY 11 TO MAY 31, 1890.

PURVIANCE, GEORGE, *Surgeon.*—Detailed as Chairman of Board of Examiners, May 31, 1890.

LONG, W. H., *Surgeon.*—Granted leave of absence for three days, May 19, 1890.

GODFREY, JOHN, *Surgeon.*—Detailed as a member of Board of Examiners, May 31, 1890.

FAIRFAX, IRWIN, *Surgeon.*—Detailed as Recorder of Board of Examiners, May 31, 1890.

CARTER, H. R., *Passed Assistant Surgeon.*—Ordered to examination for promotion, May 31, 1890.

BANKS, C. E., *Passed Assistant Surgeon.*—To proceed to Boston, Mass., on special duty, May 2, 1890.

PECKHAM, C. T., *Passed Assistant Surgeon.*—Granted leave of absence for eight days, May 14, 1890.

AMES, R. P. M., *Passed Assistant Surgeon.*—To proceed to Memphis, Tenn., for temporary duty, May 14, 1890. To proceed to Gulf Quarantine Station for temporary duty, May 31, 1890.

PERRY, T. B., *Assistant Surgeon.*—Ordered to examination for promotion, May 31, 1890.

CONDICT, A. W., *Assistant Surgeon.*—Granted leave of absence for twenty-two days, May 24, 1890.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked. Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVI. SATURDAY, JUNE 21, 1890. No. 25.

ORIGINAL LECTURES.

ON PRIMARY PROGRESSIVE MYOPATHY.

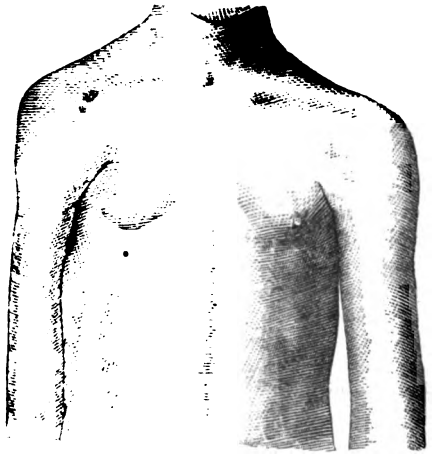
A Clinical Lecture
delivered at the New York Polyclinic, April 29, 1890.

BY B. SACHS, M.D.,

PROFESSOR OF MENTAL AND NERVOUS DISEASES IN THE NEW YORK POLYCLINIC.

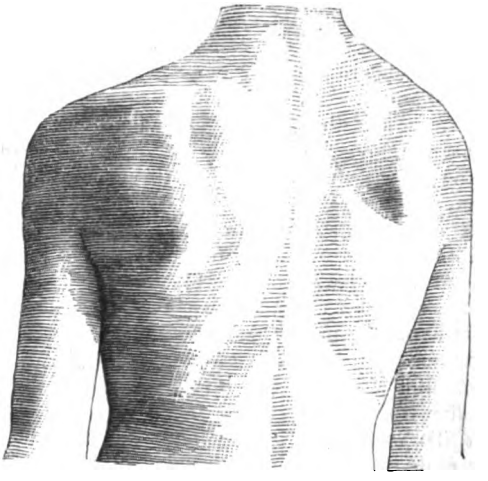
GENTLEMEN: It is a rather rare experience to find a single case that has an important bearing upon some medical theory, or that can be said to decide some mooted point. Such a case I present to you to-day. The patient before you is a youth aged twenty years. His history is entirely negative, except that at the age of seven or eight years he had a tooth extracted, and since that time has noticed a certain peculiarity about his face. He was not able to whistle as well as other boys, and, as long as he can remember, his face appeared twisted to one side, at least while speaking. It was not until one year ago that he was aware of any further trouble. At that time he fell upon his shoulder, and since then has noticed a weakness of both upper extremities. He was employed by a surgical instrument-maker and had to lift heavy boxes, but this he is no longer able to do. The extraction of the tooth and the fall upon the shoulder are landmarks in the boy's history; they served to call attention to his trouble, but surely they do not stand to the latter in the relation of cause to effect.

FIG. 1.



The most superficial inspection of the patient shows us that some of his muscles appear unusually small, others unusually massive; there is atrophy of some muscles and hypertrophy, or apparent hypertrophy, of others. Proceeding from below upward, you will please note that the anterior surfaces of the legs are much flattened, the calves, however, are unusually large and firm to the touch, the left being larger than the right; the patient is very positive *that they are smaller now than they were a few years ago*. It is fair, therefore, to say that the calves of this patient are in a condition of pseudo-hypertrophy. The thigh muscles are a little below the normal volume, and the right is smaller than the left. The gluteal muscles are well preserved. The muscles of the abdomen and lower portion of the back present no abnormalities, and the greatest changes are evidently in the chest and shoulder muscles (see Figs. 1 and 2).

FIG. 2.



I ask you to note the deviation of both scapulæ from the median line, the right scapula being rotated upward and inward, the left chiefly outward and downward; the hand can be easily passed between the scapula and the wall of the thorax. If I ask the patient to raise his right arm, you will observe that he can bring the arm to the horizontal position easily enough, but that he cannot bring it into the vertical position; showing, therefore, good action on the part of the deltoid, but deficient action on the part of the serratus.[1] The left arm he can raise a little better than the right, but not altogether freely. If he is put on the floor, you will notice that he can rise with great ease. I ask him, furthermore, to whistle—he cannot do it; I ask him to keep his eyelids tightly pinched, you see I can open them without any difficulty.

The muscular abnormalities are so numerous that it will be well for us to examine them *seriatim* and to note which muscles are wasted, which hypertrophied, and which have remained normal.

[1] The photographs do not bring out the winged appearance distinctly.

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Wasted. — Both pectorals, major and minor; both serrati, right more than left; both latissimi dorsi, left more than right; levator anguli scapulæ, right more than left; rhomboids, left more than right; both trapezii (middle and lower third), left more than right; both biceps muscles and both brachiales antici; both triceps, right more than left; supinator longus, right more than left; anterior thigh and leg muscles, left more than right; posterior thigh muscles (thin); orbicularis palpebrarum of each side, and the orbicularis oris.

Normal.—Back muscles, forearm and hand muscles, gluteal muscles, and small muscles of feet.

Hypertrophied.—Deltoids, infra-spinati, supra-spinati, and calf muscles, but the right calf is beginning to waste.

After this detailed examination it remains for me to add that there are no fibrillary contractions in any of the affected muscles. This slight quivering, which we observe for a few seconds, is simply due to exposure of the bared skin. Another fact of some diagnostic importance we gain by an examination with galvanic and faradic currents. The result of this electrical examination is, that all muscles, including those wasted and those hypertrophied, respond to both currents in proportion to the quantity of normal contractile fibres that each muscle retains. In other words, although there may be a feeble response, there is no reaction of degeneration of any muscle. Lastly, let us note that the knee-jerks are present, that there is no ataxia, no disturbance of sensation, and that there is not a single symptom pointing to an involvement of the central nervous system.

The absence of the reaction of degeneration and of the fibrillary contractions, particularly of the former, is the point which I wish to impress upon you. By these negative symptoms and by the occurrence of distinct pseudo-hypertrophies we can distinguish this case before us from cases of progressive muscular atrophy of spinal origin. But if we are convinced that this is a purely muscular trouble, a primary myopathy, the question arises, To which one of the many subdivisions shall we relegate the case? Reviewing the symptoms, there would be some reason to class it among the pseudo-hypertrophies; from the appearance of the shoulder girdle and the thinness of the upper arm we might rank it with Erb's juvenile form, and if we take the face into consideration, we must classify it with the Landouzy-Déjérine type of progressive muscular atrophy.

We cannot call it a case of pseudo-hypertrophy pure and simple, for, although the shoulder muscles are sometimes involved in such cases, it is very exceptional to have both shoulder and face muscles affected. Westphal reported one case of pseudo-hypertrophy in which the face muscles were affected, but there was no involvement of shoulder muscles. From Erb's form it is distinguished by the involvement of the face muscles; although, as I pointed out in an article on muscular dystrophies published in the *New York Medical Journal*, December, 1888, it is possible that the face is more frequently involved than Erb was willing to believe. From the ordinary cases of the Landouzy-Déjérine type this case is distinguished by the additional involvement of the calves. You will not do the boy the injustice to suppose that he is affected with three different diseases. The symptoms in his case simply prove the point I raised in the paper referred to above, that the mere localization of atrophies and hypertrophies does not constitute a sufficient distinction between the various forms of progressive muscular troubles. At that time I had already endeavored to simplify matters by dividing the primary myopathies into cases of Erb's juvenile form and cases of pseudo-hypertrophy. This patient, however, convinces me that even these two forms are closely related, and, as you see, occur in one and the same individual. Instead of making a diagnosis of three different forms of progressive muscular atrophy, let us say that this young man is afflicted with a progressive primary myopathy involving the legs, the shoulder muscles, and the face.

CASE II.—This case is of special interest when considered in connection with the preceding one. We elicit from the father, who has brought the patient to the clinic, the following history: The boy is eight years of age. There have been eight children in the family, four of whom are dead, four living. None of the other children were affected like this boy. Our little patient did not begin to walk until three years of age, and he has never been able to walk or run as well as other children. As he stands before you, the boy keeps his mouth open and there is a stupid grin on the face, which is in accord with the somewhat demented state of his mind. He drools, as many of these children do. The patient walks in a waddling way, carefully and with a broad base to avoid falling. He is unsteady on his legs.

You will notice, on superficial inspection, the winged appearance of his scapulæ, the case being in this respect similar to the preceding. This patient can, however, raise both his arms with considerable ease. We note also a marked lordosis of the spinal column, due to the wasting of the long and deep muscles of the back. If I attempt to lift up this boy by the arms, you will observe that I cannot get a firm hold, that there is no resistance on the part of the shoulder-joint, and that I can lift him only by grasping the walls of the thorax. Note, however, that there is no hypertrophy of any of the muscles about the shoulder-joint. The muscles in the lower part of this child's body are extremely well developed—the glutei are large, the thighs are fully of normal volume, and the calves are large and unusually hard to the touch. There is no evidence of atrophy below the waist.

If I place the boy upon the floor and ask him to rise, he cannot do it. If we give him a little assistance, he can get into the erect position by climbing up upon himself. The knee-jerk is absent on both sides; there are no fibrillary twitchings, either in the hypertrophied muscles of the lower extremities, or in the atrophied muscles of the upper extremities. The atrophy of the upper extremities is chiefly confined to the shoulders and arms, while the muscles of the palms and forearms are fairly well developed. The most marked atrophy is in the serratus anticus, and, in contrast to what we found in the other case, in the supra- and infra-spinati. The deltoids are smaller than usual, the rhomboids are considerably atrophied, while the pectorals are not markedly so. The electrical tests show that the hypertrophied and atrophied muscles respond as did those of the preceding case—that is, in proportion to the quantity of normal fibres. If you had seen the first case at the age of this little boy, the difference between the two would, possibly,

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not have been very great. No one would deny that this second case is a typical pseudo-hypertrophy, yet the hypertrophied condition of a few muscles in the first case constitutes the only real distinction between the two.

I do not intend to speak to-day of the future course or of the treatment of this disease. I feel confident that you will receive the same impression which I have formed, that these two cases bear a strong resemblance to one another, and that they are both types of a widespread nutritive disturbance of the entire muscular system.

ORIGINAL ARTICLES.

THE VALUE OF THE LEITER INCANDESCENT-LAMP URETHROSCOPE IN THE DIAGNOSIS AND TREATMENT OF CHRONIC URETHRAL DISCHARGES.[1]

BY JOHN B. DEAVER, M.D.,

DEMONSTRATOR OF ANATOMY AND LECTURER UPON SURGICAL ANATOMY IN THE UNIVERSITY OF PENNSYLVANIA; ATTENDING SURGEON TO THE PHILADELPHIA, GERMAN, ST. MARY'S AND ST. AGNES'S HOSPITALS.

HAVING used the Leiter incandescent-lamp urethroscope for some time with most gratifying results, both in the diagnosis and the treatment of chronic urethral discharges, I have felt that it would be of interest to present my views upon the advantages offered by this instrument, at the same time illustrating my remarks by the citation of a few of the many cases I have recorded in my case-book.

The incandescent-lamp urethroscope made by Leiter, of Vienna, consists of three pieces: the handle, the lantern, and the urethral canulæ or tubes. The handle is made of vulcanized rubber and has upon its upper end a small incandescent lamp, which is connected with the two binding-screws projecting from its lower end.

The light steel spring on the side is the key by which the current is connected and broken. The handle fits into the bottom of the lantern.

The lantern is a gutter-shaped box, roofless, having at one end, which I will call the ocular end, an obliquely placed concave mirror for the purpose of reflecting the light of the lamp along the urethral canula or tube, also a movable lens intended for either long- or short-sighted observers. At the other end is a nozzle for fitting on the tubes. In addition to this are also noticed small perforations in the floor of the lantern immediately around the lamp, which are intended to carry off the heat. The urethral tubes are of different sizes, intended, of course, to be used in different sized urethræ. The larger the tube used the more satisfactory will be the examination, and, if necessary, I do not hesitate to enlarge the meatus, which in most cases we find contracted, and this simple division will, in some instances, relieve the patient of the trouble which we are trying to learn the nature of by the urethroscopic examination. The nearer the size of the tube approaches the normal calibre of the urethra, the less likely are we to overlook a fold which may be the seat of a small patch of disease. The mirror is to be so adjusted as to reflect the light along the tube.

FIG. 1.

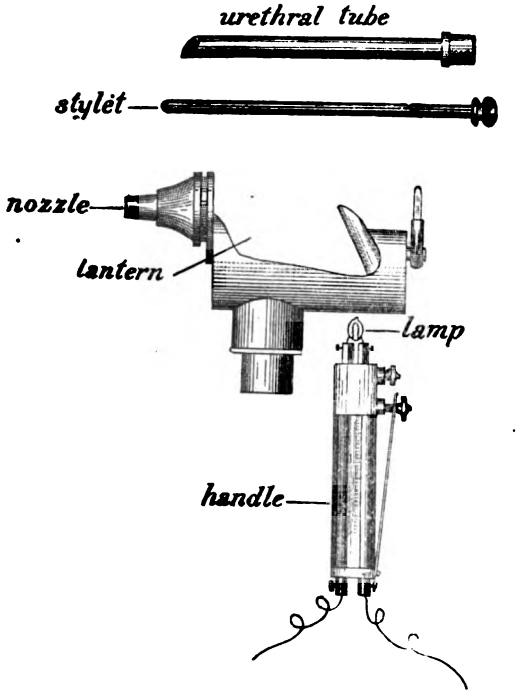
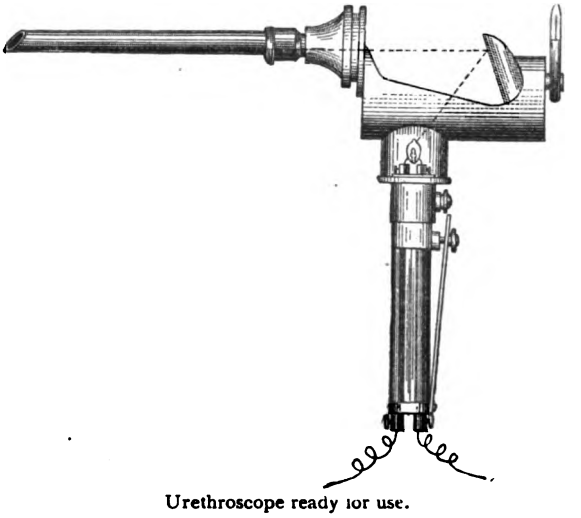


FIG. 2.



Urethroscope ready for use.

The construction of this instrument is so simple that it very seldom gets out of order. The most delicate part is the lamp, which after being used some time requires changing, as it is apt to become

[1] Read before the American Medical Association, Section of Surgery, May 21, 1890.

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blackened. Changing is done by simply removing the handle and loosening the two small screws holding the lamp in place, when the lamp is lifted out and replaced by another, care being taken to secure it by tightening the screws. The handle is then replaced and fixed. In adjusting the lamp care must be taken to have it at a proper level, otherwise there will be insufficient illumination. To avoid all annoyance it is best, when inserting the handle into the lantern, to light the lamp and test the amount of illumination by placing the end of the urethral tube, adjusted on the nozzle, against a dark surface, when by elevating or depressing the handle the proper level can be obtained.

The two forms of batteries used by me in lighting the urethroscope, are the Julian storage system and the Grenet or plunge battery.

The Grenet or plunge battery, which I prefer, is made by Mr. Flemming, of Philadelphia, and consists of a box containing two equal compartments, the first of which is occupied by a series of rubber cells, one-half filled with the following solution: potassium bichromate, 6 ounces; sulphuric acid, 5 fluidounces; water, 3 pints. This solution must be removed every two or four weeks, according to usage. The second compartment contains one large cell, the object of which is to catch the drip from the plates after their removal from the bichromate bath, and also to protect them.

These two compartments are covered by a bed, the under surface of which is divided into two equal parts, one half being covered by a sheet of rubber, to close the cells when not in use, and the other half occupied by a number of sets of plates. Each set is composed of two carbon and one zinc plate, which are fastened to the bed in the usual manner, and so connected as to have independent action, the number of cells being thrown into circuit as required. After using the battery and wishing to discontinue the current it is merely necessary to lift out the plates, change sides, and deposit them in the one large compartment.

Upon the upper surface of the bed are a number of binding-posts corresponding to the number of cells employed, and by attaching the cords in a proper manner the number of cells desired can be brought into circuit. On this surface there is also a rheostat, consisting of a rubber plate wrapped with silver wire, connected with the cells and having a swinging arm which can be moved to any part of the plate; the object of the rheostat I will speak of later.

The other form of battery used by me is made by Waite & Bartlett, of New York, and consists of a carrier or box, containing four large storage-cells, each of which is composed of a rubber cup, a series of carbon and lead plates not in contact with each other, and contains a dilute solution of sulphuric acid which must be replenished from time to time. The materials used to connect these cells are narrow plates of lead, which are not acted upon by the sulphuric acid solution. The cells each measure two volts, and on increasing the voltage it is necessary to use a rheostat for reasons mentioned below.

There are two objections to the general use of the storage system. First, it must be charged from a dynamo, and second its weight (from 90 to 100 pounds) renders it inconvenient to carry.

The objects of using a rheostat are to govern the current, to prevent burning out of the lamp, and to measure the exact resistance of the lamp. It is a well-known fact that the carbons vary greatly in different lamps. In some the resistance is high, and such only burn when the rheostat is at its minimum; in others the resistance is so low that the lamps will not burn with a white light unless when the rheostat is at its maximum.

Manner of Using the Instrument.—In using the instrument the position of the patient which I have found most satisfactory is the recumbent one, on a table or couch of considerable height with the knees bent over the edges and slightly separated. The largest tube which the meatus will admit is now introduced, and passed gently through the urethra to the bulbo-membranous junction; unless obstruction is met with, when the stylet is withdrawn, the urethroscope adjusted, and the obstructing point examined. Great care is to be exercised in passing the tube, as it may induce bleeding, thus obstructing the field of vision. Where we are dealing with a much inflamed urethra, we will necessarily be annoyed more or less by a few drops of blood, and when this occurs it can be gently removed by a pledget of cotton carried down the tube by the applicator. In case the pendulous urethra is found normal I carry the tube into the membranous urethra by depressing the proximal end, and in this way examine the deep urethra.

Normal Appearance of the Urethra.—When at rest the walls of the urethra are closely approximated and the lumen varies in shape at different parts of the canal.

Commencing at the bulb and extending to within an inch of the meatus, the lumen is transversely slightly oval; in the remaining portion it is either vertical or triangular, and at the meatus vertical. The color of the mucous membranes varies from a pale grayish or pale bluish-pink to a full, bright pink; generally it is very similar to the buccal and labial mucous membrane in the same individual. The brilliancy resembles that of the mouth. On slowly withdrawing the urethroscopic tube the walls of the urethra will be seen to contract behind it. One of the most important characteristics of the

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healthiness of the spongy urethra is the evenness with which its walls contract behind the retiring tube, or expand when it is advanced. A limited thickening in a small area will cause them to approximate irregularly. A scanty secretion of pus will destroy the lustre of the mucous membrane.

The lumen of the membranous urethra at the site of the anterior layer of the triangular ligament is triangular, which is due to the walls being less elastic than in the spongy portion; elsewhere it is oval. Owing to the presence of the urethral crest (veru montanum) the lumen of the prostatic urethra is crescent-shaped.

All chronic discharges of the male urethra have been from time immemorial, and still are, known by the name "gleet." The opinions advanced as to the pathological conditions present in gleet in the absence of a well-marked stricture have been various, and not until recently has the proper aspect been given to these cases. The proper understanding of these conditions is solely due to the use of the urethroscope, which has been so perfected as to make the examination of the urethra, particularly the pendulous, membranous, and terminal portion of the prostatic, as satisfactory, and in every sense as reliable as is the examination of the eye-ground with the ophthalmoscope.

I believe, as does Professor Otis, that in the great majority of cases of gleet, one, and in some instances more than one stricture is present, which when situated in the pendulous urethra, the usual site, can be most satisfactorily demonstrated by the urethra-meter, and that the removal of the stricture by dilating internal urethrotomy will cure the greater number of such cases. I also believe that the minority of cases are not the result of stricture, and can be correctly diagnosed, and consequently successfully treated, by the use of the urethroscope. It has been my experience to see a few cases, where, after a complete dilating internal urethrotomy, the discharge continued, though not to as marked a degree as before the operation, and where cure has promptly followed a few applications made to the affected portion of the urethra through the urethroscopic tube; also in cases where internal urethrotomy is practised I am able to hasten the cure by local applications.

What are the varieties of gleet (meaning any chronic urethral discharge) met with and clearly demonstrated by those who practise urethroscopy?

In my experience with the use of this instrument I have been able to demonstrate the following varieties of chronic urethritis:

1st. Simple chronic urethritis consisting of three different forms; one where the surface of the urethra is uniformly livid and moist; a second where, in addition to the above, are circumscribed areas involving the deeper portion of the urethra (the submucosa), resulting in the formation of nodular masses, slight, yet easily demonstrated by the absence of the normal elasticity of the urethra; and a third where there are circumscribed areas presenting a granular surface, covered, in many instances, with adherent pus and readily bleeding at the slightest touch, which is most probably that variety of urethritis described by some authors as granular.

2d. Follicular urethritis, where the inflammatory process is confined to the simple follicles, or the lacuna magna, and in some cases to the ducts of Cowper's glands.

3d. Ulcerative urethritis, never present except when associated with stricture, the treatment of which calls for division of the stricture (dilating internal urethrotomy), and local applications to the ulcer or ulcers made through the urethroscopic tube.

It is not uncommon to meet with two or more of the above conditions in the same case.

In the absence of the urethroscope, to ascertain the exact pathological condition which is keeping up the discharge is, in a large number of these cases at least, impossible. I have made the statement that, in my judgment, by far the greater number of such cases are the result of stricture; but, even so, a urethroscopic examination properly made tells us the actual condition of the urethra, both behind and at the strictured portion. The cases which I will now cite demonstrate the advantage of the instrument in the way of treatment.

CASE I.—J. D., aged thirty-eight years, was admitted to the surgical wards of the Philadelphia Hospital, in February, 1890, with a purulent discharge from the urethra, and pain upon micturition. History of gonorrhœa for four years, followed by stricture. Was operated on in the winter of 1889, at Bellevue Hospital, by Dr. Keyes. Urethroscopic examination revealed a small ulcer, one-eighth of an inch in diameter, on the floor of the pendulous urethra immediately in advance of the bulbo-membranous junction. A solution of silver nitrate, 10 grains to the ounce, was applied through the urethroscopic tube by means of the applicator. Two more applications, at intervals of three days, were made, when the ulcer was entirely healed, resulting in the relief of all symptoms. The patient was kept under observation for one month, when he was discharged cured. This ulcer was evidently the result of the stricture, but, unlike it, was not cured by the internal urethrotomy, which, I believe, would often be found to be the case were a careful urethroscopic examination made in many of those cases where the discharge is still present.

CASE II.—C. D.; private patient; came under my care some months since, with a history of gleet of two years' standing. During this time, he says, he had several attacks of gonorrhœa immediately following connection; these were evidently not attacks of true gonorrhœa, but simply aggravations of the existing urethritis, the result of the venereal

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act. Examination of the deep urethra with the *bougie-à-boule* and of the pendulous urethra with the urethra-meter revealed the absence of stricture. This examination was followed by some bleeding. Urethroscopic examination revealed chronic urethritis, with three distinct granular points on the floor of the pendulous urethra, 2½ inches anterior to the bulbo-membranous junction. The granular patch nearest the meatus bled freely when touched.

Four applications of a 20-grain solution of silver nitrate were made at intervals of five days. In addition to the application of silver solution, the patient used the following injection four times daily: sulphocarbolate of zinc, 12 grains; sulphate of morphine, 4 grains; distilled water, 4 ounces. At the end of three weeks, all symptoms having subsided, treatment was suspended. The patient reported two weeks later, when a urethroscopic examination showed the urethra to be normal.

CASE III.—W. H.; private patient; came to me suffering from a chronic urethral discharge of four years' standing, as a result of a very severe attack of gonorrhœa. Three years ago he was examined by a genito-urinary specialist, who found a stricture of large calibre in the pendulous urethra. This specialist cut the stricture by dilating internal urethrotomy, since which time the patient has been passing, at stated intervals, a No. 36 (French scale) bougie. During the past three years, the patient states, he has had several attacks of gonorrhœa of a mild type, but these were evidently attacks of so-called bastard gonorrhœa. Examination for stricture showed the urethra to be normal throughout. Urethroscopic examination of pendulous urethra was negative, except at the point which had been the seat of the stricture; here there was an absence of the normal elasticity, particularly well marked on the floor. Examination of the membranous urethra showed the mucous membrane of the anterior part of the floor to be dark red and presenting a distinctly granular area, bleeding upon the slightest touch. In the light of this examination I made instillations, of 5 minims each, of a 20-grain solution of silver nitrate, six in all, into the deep urethra with the Ultzman drop-catheter, at intervals of three days. This treatment not proving satisfactory, I brought into the field of vision the granular area, and made two applications through the urethroscopic tube, this sufficing to accomplish the desired end. Some weeks since the patient wrote me that he was well.

CASE IV.—G. G.; private patient; contracted his first attack of gonorrhœa in 1883. It ran through the three stages, and had all the characteristic symptoms of genuine acute urethritis. The treatment consisted of balsam of copaiba internally and various injections; it lasted four months. In 1884 he contracted a second attack, which did not differ from the first, excepting that it lasted six months.

In 1886 he contracted a third attack, which was by no means as pronounced as either of the previous. He had merely a discharge which differed from that of the other attacks in being thinner and whiter. The treatment was internal only, and consisted of paste of the balsam of copaiba and of cubebs, for two weeks.

He did not have connection nor did he drink any spirituous liquors for one month after the discharge stopped; when having transgressed from the path of virtue, upon the day following he had a return of the discharge. There was neither pain nor discomfort other than that occasioned by the presence of the discharge. He was again treated by balsam of copaiba internally and by injections, but not improving as rapidly as his medical attendant thought he should, the systematic passage of steel bougies in connection with the above treatment was begun. The medication was continued until the patient's stomach would no longer tolerate the balsam, when it was omitted, the bougieing and injections being persisted in. Three months from the institution of the treatment, the patient remaining abstemious, there was still enough discharge to make him despair as well as seek other advice.

In July 1888, I was consulted, and examination then showed a slight gleety discharge. Calibre of urethra 36 millimetres. Stricture 3½ inches within the meatus, calibre 34 millimetres. At this time, not having a urethroscope with which to make an examination of the urethra, I believed the discharge was caused by the stricture of large calibre present. I advised the passage of solid bougies and injection *brou* (French formula), hoping in this way to restore the normal condition of the urethra. This treatment was used faithfully for five months. In December there being no longer any discharge I stopped passing bougies and discontinued the injection, which had been changed from injection *brou*, several different formulæ having been used. I advised that a No. 35 solid bougie be procured and passed once a week for some time.

In August, 1889, I was again consulted for an epididymitis of left testicle, following the passage of the bougie. This attack of epididymitis confined the patient to house for one week, when the discharge again returned. As soon as the epididymitis had cleared up I examined the urethra with urethrameter, finding it trespassed upon to a little less than one millimetre at site of original stricture. Examination of urine showed presence of a few pus corpuscles and some shreds of mucus. Examination of prostate through rectum was negative. Believing the cause of the trouble to be chronic inflammation of the deep urethra, I used instillations of solution of silver nitrate, varying in strength from 10 to 20 grains to the ounce, using the Gross instrument.

In a very short time the discharge disappeared, only to reappear after taking a glass or two of beer. In the fall of 1889, a urethroscopic examination showed the cause of the trouble to be chronic urethritis with granular areas in the membranous urethra. Treatment like that I have detailed proved in a short time entirely satisfactory.

The citation of these four cases, I think, is sufficient to support what I have intended to convey by the title of this paper.

In addition to the value of this instrument in the diagnosis and treatment of chronic urethral discharges, I desire to call attention to what, by its

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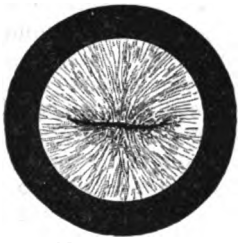
use, I believe I have demonstrated to be a cause of failure in obtaining cure in a certain number of cases of stricture operated upon by divulsion, and which I think is an argument in favor of dilating internal urethrotomy (the operation I strongly advocate where it is feasible), as the cause of failure cannot result from the cutting operation, if properly done. I refer to tabs or teats of mucous membrane which have been separated at the time of the divulsion; and by bougieing, the usual after-treatment instituted in these cases, the union of these tabs to the surface from which they were torn has been prevented. In two cases coming under my care recently, I have found the following conditions as here shown in the diagrams.

FIG. 3.



Normal ureter.

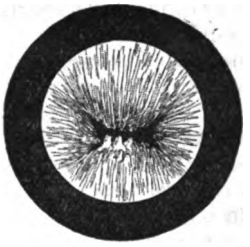
FIG. 4.

Teat-like prominence of urethral mucous membrane.

FIG. 5.

Same as Fig. 4. Point of prominence showing in the centre.

FIG. 6.



Multiple projections of mucous membrane into the urethra.

FIG. 7.

Multiple small projections into the urethra. Same as Fig. 6; tube partly withdrawn.

This condition, in my judgment, granting that all of the strictured area has been removed, is quite sufficient to keep up a discharge.

The routine treatment of cases of chronic urethral discharge is by injections, soluble bougies, the systematic passage of solid bougies, and internally by the administration of stimulating blennorrhagics, until the patient's stomach will no longer tolerate them, and with, in many cases, little or no effect. It is evident to all that this form of treatment will no doubt modify the condition, and will cure a few cases. The advantage offered by the method advocated in this paper is, that we are with certainty able to deal with the diseased point or points, it being necessary only in a very few to trespass upon the prostatic urethra proper, which is always done in the ordinary routine practice of introducing the bougie into the bladder, thereby exposing the prostate gland to injury, as well as endangering the patient to an attack of epididymitis.

ON THE MANAGEMENT OF OBSTINATE DROPSIES.[1]

BY JAMES TYSON, M.D.,
PROFESSOR OF CLINICAL MEDICINE IN THE UNIVERSITY OF PENNSYLVANIA.

A SUCCESS greatly beyond what I expected in the management of certain cases of obstinate dropsy, mainly instances of incurable kidney disease, but even better calculated to succeed in cardiac disease with renal sufficiency relatively maintained, has led me to wish to announce the method pursued, although it involves the use of no drugs that are new or other measures that are novel. My paper will be illustrated by three cases; indeed, may be said to consist of these with comments. All three may be said to have been water-logged in the highest degree, and there was large abdominal dropsy requiring tapping from one to five times. All had been treated with the usual diuretics and purgatives to no purpose; indeed, the symptoms kept on increasing:

The first patient was a man, aged forty years, who had been, for several years, superintendent of an Indian school in Arizona. Until June 16, 1889, he regarded himself in good health. About this time he took a long tiresome wagon journey with General Armstrong, and on his return noticed some swelling in his feet. This rapidly increased until the anasarca became general despite all treatment, and he came East. I first saw him August 15th, with Dr. G. C. Laws, of Paulsboro, N. J. There was general anasarca and large abdominal dropsy, and I at once drew off a gallon of water from the peritoneal sac. Examination of the urine revealed much albumin, numerous dark, granular casts, and compound granular cells. There was evident chronic parenchymatous nephritis. He was sent to his home in a neighboring town, digitalis being ordered in full doses. He bore the journey of thirteen miles well. He was put to bed between blankets, which produced copious sweating. There was, however, no improvement, and in a few days the abdomen had refilled. Desiring to make use of some treat-

[1] Read before the Medical Society of the State of Pennsylvania at its meeting in Pittsburg, June, 1890.

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ment totally different from what he had pursued, I then ordered him to be placed upon a pure skimmed-milk diet, directing that he should have two ounces every two hours throughout the day, from 7 A. M. to 9 P. M. All drugs were discontinued, but he was permitted to have some whiskey, if needed, as he felt very weak. This was on the second day of September, and I did not hear from him until October 25th, when Dr. Laws reported that Mr. G. had greatly improved under the skimmed-milk diet. More recently, however, he thought that improvement had ceased, and that liquid was again accumulating in the abdominal cavity as well as in the subcutaneous connective tissue generally. He was passing, however, three pints of urine in twenty-four hours, and the albumin had greatly diminished. I then added to the milk diet spartein in doses of one-fourth of a grain three times a day. On the 2d of November I was much surprised to see Mr. G. walking into my office, having come from his home that morning in that train. He was then without dropsy, but reported that his legs became swollen toward evening, and that he was up all day. Under the use of spartein and milk the urine had increased to sixty-five and seventy-five ounces in the twenty-four hours. Careful examination failed to discover casts, although the urine still contained one-seventh its bulk of albumin. He was directed to continue the spartein in one-third grain doses as required to keep up the flow of urine; also to continue the milk a while longer until the dropsy had completely disappeared, after which he was to be permitted a diet a little more liberal.

Exactly one month later he called again, looking and feeling well. He was passing from two to three quarts of urine daily, and living largely on milk, but he occasionally took a baked potato and a boiled onion. He had tried oatmeal, and was under the impression that it increased the amount of albumin in the urine. He had been taking one-third of a grain of spartein three times a day with occasional interruptions. He was then on his way to Florida, where he was to spend the remainder of the winter.

The patient called again on the 15th of April apparently in perfect health, having just returned from Florida. He had taken no medicine, but had kept pretty closely to skimmed milk, having, however, occasionally taken a baked potato and a soft-boiled egg. The urine still contained a small quantity of albumin, but no casts were found.

The next case was a more intractable one, and ultimately proved fatal, although his life was prolonged long after it had been despaired of, illustrating what may be accomplished by treatment.

H. H., a man, aged forty-three years, was admitted to my wards in the Philadelphia Hospital on the 13th of April, 1889, with the primary diagnosis of acute bronchitis. He had been in the English army in India, and came to this country in 1872. Since his arrival here he has been working as a carriage-finisher. He has been dissipated, often going on sprees for three or four days at a time. It was discovered very soon after his admission that he had albuminuria, but his salient symptoms were those of an obstinate bronchitis, to which was soon added a pleurisy. He gradually recovered from his cough, but œdema of the extremities soon set in, and gradually ascended. Simultaneously the albuminuria increased, while granular and hyaline casts were found in his urine. The anasarca became general, and the effusion invaded the pleural sacs and abdominal cavity. He was treated actively by cupping and blistering, the use of digitalis, strophanthus, spartein, pilocarpin, and purgatives, by Hay's treatment with concentrated solution of magnesium sulphate in connection with limited ingestion of fluids, and by hot-air baths. Paracentesis of the chest was performed several times. Paracentesis abdominis was attempted, but failed, because of the thickness of the abdominal walls, which were in a state of myxœdema. Notwithstanding these decided measures, no advance was made; indeed, he was slowly losing. He was orthopnœic and the picture of distress. About the 1st of August paracentesis thoracis was repeated, and I left for my vacation, never expecting to see him again. I, however, directed, before leaving, that he should be placed on a skimmed-milk diet. I resumed my wards on the 11th of September, and was greatly astonished to find him not only alive, but greatly improved in his condition; there was still swelling in the arms and legs, but they were much better. He was passing about 40 ounces of urine. He had been under skimmed milk throughout. He had, however, every three or four days been also sweated by a method not novel, but which I have found very satisfactory. Large bottles—wine bottles are of the best size and shape—are filled with hot water, surrounded with cloths wrung out in hot water, and applied to the surface of the body wherever possible. I now, September 8th, added to his treatment spartein in doses of ½ grain three times a day. It will be remembered that this drug had previously been given without effect, not, however, in connection with an exclusive milk diet, which was continued in the quantity of about 42 ounces daily. It again appeared without effect, and on the 14th was substituted by the infusion of digitalis. The quantity of urine ranged from 32 ounces to 44 until the 25th, when it rose to 55 ounces, and continued to rise with fluctuations until 69 ounces were reached. Then there was some diminution, but the quantity continued free until about the 1st of November, when it began again to decline until November 15th, when but 20 ounces were passed. Spartein was then again resorted to, and at once the urine rose rapidly and remarkably. Thus, on the 16th there were 20 ounces; on the 17th, 33; on the 18th, 40; on the 19th, 50; on the 20th, 70; on the 21st, 128; on the 22d, 169; on the 23d, 155; on the 24th, 114; on the 25th, 148; on the 26th, 149. On the 26th the drug was discontinued, when at once there began a gradual fall, the quantity being, however, still free. On the 5th of December, the quantity being 121 ounces, the infusion of digitalis was again commenced; the urine remained over 100 ounces until December 30th. During this time he ingested not more than 45 ounces of milk. Of course, the dropsy gradually diminished, and his general condition

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greatly improved. His legs, which had become ulcerated from the excoriating effect of the leakage from the burst tissues, gradually healed, although the skin remained very hard. He was up almost the whole day, moving all over the wards in a wheel-chair. A drawback occurred about the middle of November, when he had a severe chill, and there developed some cerebral symptoms which suggested uræmia. This was the day before the urine reached the low point referred to of 20 ounces, and on the day of the chill there were but 40 ounces. Purgatives and vapor baths were given for a couple of days with the spartein, and as the urine increased the uræmic symptoms rapidly subsided, and by the 23d they had disappeared. The fluid persisted most stubbornly in the pleural sacs, and he was again aspirated on December 22d.

On the 30th of December I ceased my service in the hospital, and although the notes, which were placed at my disposal, indicate a free discharge of urine up to the middle of January, he died about this time.

Necropsy.—The post-mortem examination was interesting. The notes state that he was a man of extremely large size, weighing about 250 pounds. The abdomen was much distended, and upon being opened was found to contain many quarts of serous fluid. The right pleural cavity was almost filled with bloody fluid—about 2½ quarts—the lung being collapsed to the size of a man's fist. The left pleural sac contained a small amount of fluid. The pericardium contained but little fluid, and the heart was much hypertrophied, weighing 20 ounces. The kidneys are noted as slightly enlarged, but as each weighed only 6½ ounces they cannot be regarded as enlarged. I should consider them rather below the normal size for a man of that weight. The capsule was but slightly adherent. The description on section is not definite. The note says, "Kidney substance was much wasted, only about ¾ of an inch left." Presumably this refers to the cortex, and if this is the case ¾ of an inch of cortex cannot be regarded as wasted. It is full width. I was informed, in fact, by one of the resident physicians present at the autopsy that there was quite a discussion as to whether the cortex was actually reduced or not. Nothing is said as to color, or, indeed, as to any appearance. Nor was any microscopic examination made. The probabilities are that the case was one of chronic parenchymatous nephritis in the stage of beginning contraction, and illustrates, what is so often seen in renal disease, an apparent disproportion between the gravity of symptoms and the degree of lesion.

The third case, also a desperate one, was that of a young man, twenty-eight years old, admitted to the Hospital of the University of Pennsylvania February 3, 1890. He was a stone-mason, and had regarded himself as in perfect health until Nov. 14, 1889, when, after a drive of eight miles, he ate his dinner and lay down for a nap. On rising he noticed that his face was swollen. The day was chilly, but he was well protected, and was not aware that he had taken cold. He had, however, also been working for a week previous to this drive in a damp cellar. The swelling extended rapidly, and in a few days he was anasarcous. He consulted a physician, who said the dropsy was due to kidney disease, but allowed him to be up and about for a month. He then put him to bed, where he remained until admitted to my wards.

On admission there was extreme general anasarca and large abdominal effusion. His face was so swollen that his eyes were almost closed and his hands and arms were like cushions. His legs, thighs, and abdominal walls were similarly infiltrated, and the first were marked with cicatrices left from scarifications which had been made to allow the serum to drain off. His scrotum was as large as a child's head. The secretion of urine was very scanty, only fourteen ounces being secreted the first day after admission. He was first placed on Hay's treatment, with concentrated salines and restricted fluids. Digitalis had been used before admission in such quantities that the smallest dose sickened him, and it was impossible to use it. His abdomen was tapped and a gallon of water drawn off. A hot vapor bath was given without effect, and pilocarpin hypodermically, in one-third and one-quarter grain doses, with like result.

On the 16th of February he was placed on skimmed milk—four ounces every two hours, increased to six ounces in the second twenty-four hours, and subsequently to eight—in lieu of all other food and medicine, except such as was required to keep his bowels open. Under this treatment his urine increased from an average amount of twenty-five to thirty ounces, but never became large. The dropsy, however, rapidly diminished, and soon had entirely disappeared from his arms, face, and trunk and almost entirely from the lower extremities. On the 28th of February he was permitted to have, in addition to the milk, four oysters, to his intense satisfaction. He was also allowed small doses of Basham's mixture, with strychnine. The abdominal effusion gradually re-accumulated, and he was again relieved of a gallon of fluid, on March 10th. During this time the bowels were kept freely acting with magnesium sulphate, but, as stated, the quantity of urine did not increase above thirty ounces and remained for the most part at about twenty-five. With a view to increasing this secretion spartein was ordered in one-quarter grain doses, three times a day, and increased until two grains a day were taken without any effect. Caffein was then ordered (March 20th) in doses of three grains, three times a day, without materially increasing the quantity of urine, but with an unexpected effect on the bowels, which were moved from seven to thirteen times in a day. Notwithstanding this, he felt perfectly well, and the dropsy had almost entirely disappeared, even from his feet, although he was up many times on account of his bowels. On the 27th his temperature, which had been either normal or subnormal since his admission, suddenly rose, simultaneously with that of every other patient in the ward. He acquired a stubborn cough, his breathing became embarrassed, and he seemed very ill. Then his dropsy rapidly increased, and in a few days he was as bad as ever. He became discouraged and left the hospital. The acute illness which was responsible for this relapse

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was probably influenza, as all the patients in the ward were suddenly attacked by it.

These cases represent a class in which the usual measures fail to accomplish any results, and it is certain that if they had been left alone the patients would have perished. In all a turn in the tide took place after milk began to be administered at regular intervals and in fixed doses. In two the opportune addition to this treatment of spartein in full doses was followed by free increase in the secretion of urine, with continued improvement, while in one this drug failed. On the other hand, in that case caffein proved a valuable remedy, though not by its action on the kidneys so much as by its effect on the bowels. This effect of caffein, scarcely referred to by therapeutists, I have found a frequent one, by which its efficiency as a diuretic is greatly increased. Although there is reason to believe that sugar of milk is a diuretic, it is evident, from a review of these three cases, that the substitution of all food by milk was not followed by diuresis, and yet improvement set in, and when it flagged and diuretics were used the physiological effect of this class of remedies promptly appeared in two instances, while in the third a purgative effect was equally efficient.

In looking about for an explanation of this happy effect I have been forced to conclude that it was really the result of the small amount of solid and liquid nutriment ingested. It will be remembered that the method was to permit but four ounces every two hours for the first day from 6 A. M. to 8 P. M., or thirty-two ounces in the twenty-four hours, in lieu of all other solids and liquids, and in the second twenty-four hours but sixteen ounces more. Now, even with the urine unincreased and the action of the skin, lungs, and bowels maintained, there is a large drain upon the liquids, intra- and extra-vascular, so that the latter are bound to be sucked up, with the effect of gradually diminishing the œdema.

The effect is similar to that which is produced by blood-letting upon absorption. It is well known, for instance, that when a drug, as digitalis, is being administered without effect, and, for any reason, even a small quantity of blood is drawn, the physiological effect promptly asserts itself because of its prompt absorption. The limited ingestion of food in the shape of milk acts similarly, while it facilitates for the same reason the action of drugs, as shown in its effect upon the action of the spartein and caffein in my cases. The same effect on dropsies might be expected if blood be taken from a vessel, and I can conceive of a case where such a course would be justified, but it has the disadvantage of withdrawing nutriment, while the milk keeps it up sufficiently. On the other hand, I regard the hunger as an important adjuvant, and it is the demand of the blood for food which contributes to the drawing up of the dropsical fluid. It is similar, too, to the action of Hay's treatment, which has for its principle the minimum ingestion of water along with the action of hydragogue cathartics, and there is no doubt that this treatment is often an efficient one in removing dropsies, even when invading the great serous sacs like the pleuræ and peritoneum. It has the disadvantage, however, of presenting food in a more unmanageable shape, especially in connection with limited water ingestion, than the milk, which is given skimmed simply because it is more assimilable in this shape. Buttermilk may be substituted, being equally well assimilated, often more agreeable to the stomach, and often diuretic. Further, milk may be made even more assimilable by being peptonized.

There is, of course, no direct curative effect upon the altered organs, whether kidneys or heart, but when it is remembered how much of the inconvenience of the patient is due to dropsy, and how the circulation is interfered with by these enormous accumulations of liquid in the great serous sacs, as well as in the subcutaneous connective tissue, it is evident that the relief afforded by their removal must be extreme. It is true, also, that the movement of blood through the kidneys is further interfered with by the dropsical effusion around it, and with the removal of that effusion the engorgement is relieved, and thus a tendency toward cure results; whence may be explained, on the one hand, the long immunity from recurrence often enjoyed by such cases, and on the other, the rapid aggravation which follows exposure to cold or other cause of congestion, as instanced in the case of the young stonemason related. Such is also another very similar case of a young actor in whom there was dropsy equally aggravated, which after months of treatment had totally disappeared so that he was walking about apparently well, when the irresistible attraction of a base-ball match on a cold April day furnished the exposure which produced a recurrence of symptoms, this time irremediable.

In conclusion I desire to emphasize the class of cases in which this treatment is indicated. It is not in acute or subacute nephritis, where there remains an integrity of structure and function which permits the free transudation of water into the Malpighian capsules, but where, as has been stated, there is a complete saturation of all the tissues, including the kidney itself, with transuded serum, and where there is no movement in the lymph spaces and lymph vessels. In such cases to administer diluents is only to increase the difficulty, because it results in a further interstitial accumulation of fluid. The indication is to get rid of liquid, and to do this more must be taken out than is taken in, and as the kidneys have, for the time being, lost their power

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of removing—and it is to be remembered that this loss of power may be but temporary—ingestion must be restricted until the balance is restored. Hence we must watch and measure and limit the ingestion and watch and measure the outflow, and until the latter exceeds the former no improvement can result. It is needless to say that tapping the great cavities and even as a *dernier ressort* the tissues, is an aid to our efforts in this respect.

ON THE EMPLOYMENT OF THE CATAPHORIC ACTION OF THE GALVANIC CURRENT FOR THE REMOVAL OF SYPHILITIC NEW-GROWTHS.

A Contribution to the Medical Treatment of Tumors.[1]

BY FRANK WOODBURY, A.M., M.D.,
FELLOW OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA; HONORARY PROFESSOR OF CLINICAL MEDICINE IN THE MEDICO-CHIRURGICAL COLLEGE, ETC.

MR. X., married, thirty-three years of age, a travelling salesman, contracted the primary lesion of syphilis in May, 1885. He at once put himself under my charge, and I gave him the usual treatment, varying the form of mercurial from time to time, but relying principally upon gray powder, two grains three times a day. Secondary symptoms were moderately severe; there was not much sore-throat, but there were "milk spots" and ulcers in the mouth, falling-out of hair, and eruptions on the skin, especially psoriasis of hands and feet. The usual treatment was kept up almost continuously for about two years. One year and a half ago, he presented himself with a tubercular eruption over the left eyebrow, and in the course of about a month this had appeared upon the left side of the nose and from there soon spread over the entire lower half of the organ. Isolated tubercular lesions appeared upon the upper and lower lips and upon the chin. The masses were flattened, and showed a tendency to run together. The surface was slightly reddened, but not markedly congested. The orifices of the sebaceous glands were prominent, and large plugs of sebaceous material could be expressed by moderate pressure. The course of these lesions was indolent, and seemed very little influenced by treatment, either local or systemic. The patient was much annoyed by the appearance of his face and the comments excited by it among his friends, and very faithfully carried out the means advised for his relief. Wet dressings and dry, plasters and ointments (including resorcin and ichthyol), were resorted to, and iodides and *Sirop Gibert* were given, but with little apparent effect, except to prevent the further progress of the syphilide. Finally, while continuing the specific treatment by potassium iodide and bichloride of mercury, about three months ago I concluded to try cataphoresis, using a solution of iodide of lithium (five per cent.).[2] The applications were made upon absorbent cotton, applying the anode over the new-growth and the kathode at a distance. The anode being quite small, it was found that a current of from two to three milliampères was as much as the patient could bear without actual pain. The applications were made with moderate pressure, lasting from five to fifteen minutes, at first every second day, and subsequently twice a week. The improvement was evident; though slow at first, it has been very marked since this method was adopted, although due credit must be given to the internal treatment, which has been steadily continued. One fact illustrating the influence of treatment should be mentioned. Within the last year he has had the pleasant addition to his family of a girl, who is the picture of a healthy baby, and is without apparent blemish.

Remarks.—It is a source of gratification to the patient that there was no ulceration following the extensive infiltration of the deeper layers of the skin, thus avoiding cicatrization or scarring, which in this situation would have been very disfiguring. It may be assumed that the treatment exercised a decided influence over the course of the disease, especially as the patient was under excellent hygienic conditions and possessed a good constitution. I was led to the adoption of cataphoresis by the slow effects from systemic treatment, and by revolving in my mind the problem of how to carry the remedies to the cell-groups more directly and in greater quantity than through the ordinary channels, more especially because he did not bear potassium iodide well and always was attacked by coryza after he had taken it for a few days, requiring frequent interruptions of the treatment, I believed that the iodine was the principal or active agent in causing the absorption and disintegration of syphilitic new-growths, and the thought occurred to me that the cataphoric action of the galvanic current was just what was required to solve the problem. Of the various iodides, I selected the lithium compound because of its solubility, and because the lithium might assist in carrying off nitrogenized waste; probably the potassium salt, which is cheaper, might answer quite as well, except where there is a decided lithæmic or gouty condition.

By cataphoresis, or electrical osmosis, is meant the movements of liquids or solutions from one electrode toward the other, through animal tissues, under the influence of a galvanic current. Munk,[1] nearly twenty years ago, demonstrated the transmission of a solution of sulphate of quinine through the skin when electrodes were moistened by it, and detected quinine in the urine twelve hours after the passage of the current. Von Bruns proved that potassium iodide could be passed through the body, whether

[1] Read before the College of Physicians of Philadelphia, May 7, 1890.

[2] The current was obtained from six to eight cells of a Waite & Bartlett twenty-cell battery, measured with a W. B. dead-beat milliampèremeter.

[1] Archiv. für Anat. u. Physiologie, H. 5, 1873.

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alive or dead, in a similar manner. In the same way strychnine, cocaine, and bichloride of mercury have been made to traverse the tissues, or technically, have been driven through the skin. Adamkiewicz has employed chloroform in this manner in the treatment of neuralgia, and claims extraordinary success with it, in many cases giving immediate relief.

Where it is desired to introduce a considerable quantity of a medicament, the method of Munk should be followed. He took two of Dubois's conducting tubes, stopped with plugs of clay. Both the tubes were filled with a saturated solution of the substance to be introduced, and the plugs were moistened with it. These were then applied to the body, and currents of moderate strength passed through the parts in the same situation. Their direction was reversed every five or six minutes, because it was found that the activity of the process diminishes with the continuance of any one current. For the same reason it is necessary to charge both electrodes with the substance used. Erb[1] states that in this manner it is possible to introduce a considerable quantity within the system in a period varying from fifteen to forty-five minutes. Strychnine cramps have been produced in the rabbit, and in man traces of potassium iodide and of quinine administered thus have been found in the urine hours afterward.

With regard to the treatment of new-growths by electrolysis, we are familiar with the treatment of hypertrophied scars and keloid, and the removal of similar inflammatory deposits giving rise to stricture of the urethra, rectum, etc. In the same connection, I might also cite Apostoli's treatment of uterine fibroids, which in many cases has obviated the necessity of a resort to the knife. Dr. Garrett, of Boston, reported last year the successful treatment of 157 cases of tumors of the breast by the aid of galvanism. It seems to me that the combination of the two methods, cataphoresis and electrolysis, opens an inviting field for exploration for both physician and surgeon.[2] Possibly we may hope for the eventual successful treatment of malignant growths by this combined method. It certainly offers a more promising outlook than any surgical procedure with which I am acquainted.

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[1] Electro-therapeutics. Von Ziemssen's Handbook of General Therapeutics. New York: Wm. Wood & Co., 1887, vol. vii. p. 127.

[2] By placing the electrodes moistened with iodide of lithium in starch-water, the iodine reaction is quickly manifested at the positive pole, with a current of from two to five milliampères. It is possible that where morbid growths are superficial or merely subcutaneous, and the skin thoroughly wet with the iodide solution, electrolysis may take place directly among the cell-groups, and thus expose them to the action of nascent iodine, with results not to be obtained in any other way. It is within the limits of possibility that we may soon discover the chemical agent—chlorine, bromine, arsenic, acetic acid—which is especially obnoxious to the abnormal cell-growths of carcinoma, which Formad claims is a kind of inflammation. When this occurs medicine will achieve a triumph over surgery.

HERPES ZOSTER OF THE MOUTH AND GUMS.

BY A. C. HUGENSCHMIDT, M.D.,
OF PARIS, FRANCE.

HERPES ZOSTER, which is a rare affection in other parts of the body, is not more often met with in the mouth. In a period of ten years I have encountered only two cases, which, however, presented all the classical clinical signs of this disease. In one case the lesion was found on the mucous surface of the cheek, in the other on the gums. The following are the histories:

CASE I.—In 1884, a lady, fifty years of age, came to me complaining of an intense neuralgia of the right side of the face, involving all the ramifications of the fifth nerve, but the patient pointed to the region of the superior maxillary, as being much more painful. The disease had begun three days before with very high fever and neuralgia of the right side of the face; it was only on the fourth day that the pain became more particularly localized in the region of the superior maxillary nerve.

On examining the mouth the teeth of the superior maxilla were found in a perfect state, excepting a few very small gold fillings. When, however, I tried to separate the cheek from the gum, the patient uttered a loud cry, saying "There is all the pain." The gum was not at all inflamed, but on the internal surface of the right cheek, at the hypersensitive point, I found a lesion quite sufficient to explain the pain. On a line about one and one-half inches long and one-half inch broad, there existed a series of agglomerations of small herpetic vesicles regularly disposed in an antero-posterior direction, parallel to the upper molar teeth. These small vesicles in their form as well as in their regular disposition resembled the vesicles met with in intercostal herpes zoster, or zona. The severe pain in this case was probably not due to neuralgia of the superior maxillary nerve, but of the buccal branch of the inferior maxillary. The pain and eruption persisted for about one month, the only treatment used being the insertion of a little pad of cotton covered with a morphinated ointment between the the surface of the cheek and teeth.

CASE II.—In May, 1889, the patient, a woman, twenty-two years of age, came to me suffering from intense neuralgia of the right side of the head, which had localized itself on that day in the region of the inferior maxillary nerve. On examining the mouth the upper and lower teeth of the right side were found in good condition, the lower sixth-year molar having been extracted. My attention was immediately attracted to the gums of the inferior maxilla, where I found a long line of herpetic vesicles disposed in small groups and parallel to the alveolar border, beginning at the inferior canine of the right side and terminating at the posterior

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aspect of the second molar. These vesicles were on an inflamed mucous membrane. As in the preceding case this patient presented marked febrile and other general symptoms during the three days which preceded the eruption. The patient being very anæmic was put on arseniate of iron, and, to combat the pain, antipyrine. Locally a pad of cotton covered with a morphine and cocaine ointment was placed between the cheek and gums. The pain persisted for three weeks, the fever remained, and, strange to say, as soon as the eruption disappeared the patient was taken with a severe pneumonia, which passed into chronic pneumonia and general tuberculosis, with an evening temperature of from 102° to 104° F. The patient is now (May 1, 1890) in a dying condition.

From these two observations one might conclude that herpes zoster of the buccal cavity presents itself with all the symptoms of a general disease. It is an inflammatory affection involving *one side only* of the buccal cavity, characterized by an eruption of herpetic vesicles disposed in groups and regularly distributed, which eruption is preceded by and accompanied with a neuralgic pain of the fifth nerve.

The development of the disease can be divided into two periods: the period of invasion and the period of eruption. The period of invasion comprises an elevation of temperature in the evening sufficient to be recognized by the patient, and general symptoms, such as headache, etc. There is also intense neuralgia of the fifth nerve of one side. The marked fever lasts about three days and is followed by the period of eruption. At the beginning of the eruptive period the invaded part becomes excessively painful to the touch, the mucous membrane is red and presents a series of small vesicles the size of a pin's head. A few vesicles are blended together and are regularly disposed in a straight line and on one side only of the buccal cavity. No irregularly disseminated vesicles are found. The neuralgia, which during the first three days extends throughout the fifth nerve, localizes itself in the eruption and becomes still more painful.

From an etiological point of view, herpes zoster has the form and development of an infectious disease, as has been indicated by Professor Kaposi, of Vienna, who remarks that this variety of herpes appears in an epidemic form at a certain period of the year, when pneumonia and erysipelas are also most frequently observed.

In Unna's clinic at Hamburg an epidemic of zoster was observed after the admission of a patient suffering from the disease, four patients in the ward presenting the general and the characteristic local symptoms.

In my second case the eruptive and painful manifestations of the disease disappeared at the end of three weeks, but the patient was then taken with a severe pneumonia and later with pulmonary tuberculosis, which corroborates Professor Kaposi's observations on the relation between herpes zoster and pneumonia.

The local lesions are attributed to trophic changes, due to a neuritis of the nerve distributed to the invaded part.

As to the diagnosis of the disease, if all the symptoms are marked, as they were in my two cases, no difficulty will be encountered. In irregular cases it could be mistaken only for herpetic stomatitis or for aphthous stomatitis.

Herpetic stomatitis is rarely met with alone, and is usually associated with herpetic angina. It is distinguished from zona by the irregular dissemination of herpetic vesicles on the surface of the buccal cavity, moreover neuralgia of the fifth nerve is not present. As to the general symptoms, those which precede herpetic angina are much more violent than those which announce the appearance of zona.

Aphthous stomatitis is also an infectious disease, presenting general symptoms with local pain before the eruption, but the pain has not the neuralgic type; it is a lancinating pain situated at the points where the lesions will appear.

The treatment should consist of protecting the painful part against rubbing and applying on a pad of cotton an ointment, such as the following, which I have used with benefit:

℞.—Muriate of cocaine } of each 2 grains.
Muriate of morphine }
Borate of sodium . . . 1½ drachms.
Honey . . . . . 1 ounce.—M.
Use a portion the size of a pea, several times a day.

CLINICAL MEMORANDA.

MEDICAL.

A Case of Intermittent Fever, Complicated by Acute Gastritis, Dysentery, and Leucorrhœa.—Mrs. M., aged fifty-five years, well nourished and slightly inclined to *embonpoint*. Family history good. Has had the various diseases of childhood, but her health has been otherwise excellent. Is the mother of two strong adult male children. Labors normal. I was called to the patient on the morning of October 1st. For some days she had been troubled with indigestion, anorexia, and dizziness, but these symptoms had passed away before I saw her.

She was then suffering acutely from a "cold," with severe frontal headache, and complained of feeling chilly and weak. She had no fever; tongue slightly coated; bowels regular.

I prescribed a mixture containing equal parts of spirit of nitrous ether, paregoric, syrup of ipecac, and syrup of squill, one teaspoonful to be taken every four hours in water. Also ten grains of sulphate of quinine at bedtime.

October 2. Her coryza was somewhat improved, but on the previous afternoon she had had a slight chill, followed by rise in temperature (at the time of my visit

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she had no fever). Tongue was heavily coated with a yellowish-white fur, mouth pasty, and breath foul and heavy. Prescribed five grains of calomel, divided in five powders, one powder to be taken every hour. I ordered, in addition, ten grains of quinine daily, in doses of two grains each; the last dose to be given three hours before the expected paroxysm.

3d. Patient had a very severe chill in the afternoon about 3 o'clock, followed by a temperature of 103.4°. She had had a copious movement from the bowels but was suffering intensely from indigestion. I ordered an absolute milk diet and gave:

℞.—Pepsin (Jensen's) . . . 4 grains.
Lactic acid . . . . 8 minims.
Dilute muriatic acid, Glycerin } of each . 1 drachm.
Water, sufficient to make . . 2 ounces.
One teaspoonful, in water, before each meal.

4th. During the night she had frequent spells of vomiting accompanied by extreme nausea and retching. Everything was rejected by the stomach as soon as swallowed. Stopped both quinine and pepsin mixture, and prescribed:

℞.—Bismuth subnitrate . . . 15 grains.
Carbolic acid . . . . 3 "
Peppermint water . . . 5 drachms.
Water, sufficient to make . . 1 ounce.—M.
One teaspoonful, in water, every three hours.

5th. The nausea and vomiting had increased, and were aggravated by the medicine. Severe pain in stomach and in epigastric and right and left hypochondriac regions. Bowels had not been moved since October 3d. Had a slight chill in the afternoon, followed by a temperature of 102°.

As the medicine seemed to irritate the stomach, I stopped it, and substituted the following:

℞.—Calomel . . . . . 1 grain.
Sodium bicarbonate . . . 5 grains.
Sugar . . . . . 3 "
Divided into 12 powders, of which one was given every two hours, dry, on the tongue.

In addition, I ordered brandy to be given with cracked ice at frequent intervals; an enema of hot water, soap, and glycerin was administered, and was followed by a very free evacuation.

6th. Nausea and vomiting lessened in frequency. Patient passed a comfortable night, but early in the morning was attacked simultaneously with symptoms of dysentery and leucorrhœa. Tormina and tenesmus were very marked. The desire to go to stool was almost constant. The passages were composed of blood and mucus, with a small amount of scybala, and had a most offensive odor.

The leucorrhœal discharge was dark-colored and very profuse. Temperature remained during the day at 102.1° F.

I prescribed:

℞.—Fowler's solution . . 8 minims.
Tincture of opium . . 1 drachm.
Water, sufficient to make 1 ounce.—M.
One teaspoonful in water every three hours.

For the leucorrhœa she was ordered a saturated solution of boric acid, of which one ounce was added to eight ounces of hot water, and used as an injection every four hours.

7th. A slight chill early in the day—otherwise no change. Continued treatment as before, and ordered quinine again in two-grain doses every two hours until ten grains were taken.

9th. Leucorrhœa much improved. A chill in the afternoon.

11th. The leucorrhœa had almost disappeared. Dysentery improved. No chill. Stomach rejected everything but brandy and ice. Ordered half an ounce of cold milk every three hours, and prescribed:

℞.—Bismuth, subnitrate . 8 grains.
Pepsin (Jensen's) . . 15 "
Dilute muriatic acid . 35 minims.
Glycerin . . . . 1 drachm.
Peppermint water . . 4 drachms.
Water, sufficient to make 2 ounces.—M.
One teaspoonful in cold water before taking milk.

12th. Vomiting lessened in intensity and frequency. Slight chill in the afternoon.

From this time on the gastric trouble steadily improved. But as it grew better the intermittent fever increased, the chills appeared regularly about four o'clock on each alternate day, and they were followed by high fever. Both chills and fever became more and more intense until October 25th, when the disease seemed to reach its acme. During all this time I still continued to use the prescription containing pepsin and bismuth, and also full doses of quinine.

Each succeeding day showed marked improvement in the patient until November 6th, when she was again attacked by nausea, which was caused by indiscretion in eating. By judicious employment of milk and proper food the stomach recovered its normal tone.

I kept her for several weeks on low diet, and gave simple tonics. Later, as she lived in what is commonly known as a malarious district, I gave the following prescription, which is highly recommended by Dr. Samuel Bemiss as a prophylactic:

℞.—Reduced iron . . 40 grains.
Arsenious acid . . 1 grain.
Sulphate of quinine . 40 grains.
Oleoresin of pepper . 10 minims.—M.

Make into twenty pills, of which one should be taken three times daily.

MARTIN W. BARR, M.D.,
Resident Physician in the Pennsylvania Institution for Feeble-minded Children.
ELWYN, PA.

SURGICAL.

Ligation of the Subclavian Artery.—This operation, like many others which before the days of Listerism were so fatal, has lost some of its most dreaded consequences, and future statistics will undoubtedly show a decrease in the mortality of the operation. The following case was admitted to the Jefferson County Almshouse April 5, 1890:

Henry B., colored, aged twenty-two years, of small stature. In a brawl six weeks before admission he had

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been stabbed several times and in different parts of the body, the wound giving rise to the aneurism being in front of the left shoulder, the knife entering opposite to the acromion process. From this wound he bled profusely, and stated that he thought he would bleed to death. The bleeding stopped spontaneously and everything went well for two weeks, when he noticed a small tumor at the seat of the injury, and burning pain along the inner side of the arm and forearm.

The swelling and pain increased until, on admission, there was a tumor the size of a large orange in front of the shoulder-joint, and the pain was so severe that the patient carried his arm supported at right angles to the body by the other hand. The tumor was easily diagnosed as an axillary aneurism. The subclavian artery was ligated in its third portion with strong catgut, April 8, 1890.

Pulsation immediately ceased in the tumor as well as in the radial artery. The arm was wrapped in cotton and hot-water bags were constantly applied. The patient immediately began to improve, and he complained very little of the former pain in the arm. Feeble and irregular pulsation was detected in the radial artery on the third day after the operation. The tumor slowly became smaller and when he was dismissed, May 6, 1890, had almost entirely subsided. The radial pulse at this time had been reëstablished, but was not so full as in the other forearm. The patient was able to resume his occupation as a laborer.

CUNNINGHAM WILSON, M.D.
BIRMINGHAM, ALABAMA.

HOSPITAL NOTES.

MEDIAN LITHOTOMY. SARCOMA OF THIGH. RESECTION OF KNEE.

Abstract of a Clinical Lecture delivered at the Roosevelt Hospital, New York.

BY CHARLES MCBURNEY, M.D.,
ATTENDING SURGEON.

CASE I.—Dr. McBurney first presented a little boy, four years old, who two years ago began to have trouble with urination. An examination had revealed the presence of a small calculus. The operation had been postponed for three weeks on account of an attack of measles. The usual method of performing median lithotomy, including digital dilatation of the perineal wound, the operator thought, was a procedure of considerable gravity in a young child, if the stone were large. But, in this patient the stone appeared to be only about the size of a small bean, and Dr. McBurney modified the operation by making use of a new instrument, which he had originally devised for the purpose of introducing perineal drainage-tubes after deep internal urethrotomy. The instrument consists of a grooved director, carrying a concealed knife, the end of which can be projected or withdrawn. According to the usual method of operating an incision is made down to the staff, and the knife having been removed a grooved director is substituted; but in doing this the director often catches in some fold of tissue, and with difficulty is made to reach the staff. With the new instrument this difficulty cannot arise, for as soon as the knife reaches the staff its point is withdrawn without removing the director from the groove in the staff.

It was found necessary to slightly enlarge the boy's meatus before introducing the staff. Having made a very small incision in the perineum, the director was made to reach first the staff, and then, after withdrawing the knife, it was passed on into the bladder. Small forceps being inserted into the bladder along the director, the stone was seized and removed. A drainage-tube was then introduced into the viscus in order to secure drainage for the first two days. The bladder, wound, and adjacent parts were well irrigated with boro-salicylic solution, the wound was dusted with iodoform, and the external opening of the drainage-tube was covered with a mass of moist antiseptic gauze.

CASE II.—This patient, a boy of seventeen years, had been in good health until ten weeks ago. He received at that time a strain of the right knee while playing football. Swelling and other inflammatory changes rapidly supervened, and the limb was placed for some time upon a splint. On admission to the hospital ten days ago, swelling, redness, and tenderness were found over the inner condyle of the right thigh, apparently with indications of superficial suppuration Incision did not reveal pus, but a mass of soft tissue, containing cartilaginous material; and the finger in the wound could feel the bare surface of the femur. The new growth was evidently a rapidly developing sarcoma, and immediate amputation was urgently indicated. But the patient was of a very delicate and nervous organization, and the examination produced such a profound impression upon him that the operation was postponed. His condition at present is only slightly improved, but further delay in a sarcoma of such rapid growth was not deemed advisable. The general condition of the patient was so poor that the idea of amputation at the hip-joint could not be entertained. It would be almost certainly fatal. If the disease had infiltrated the shaft of the femur the only chance of cure would be, of course, in an amputation at this point. Dr. McBurney considered that the best interest of the patient was subserved by an amputation a little above the middle of the thigh, with a long anterior flap. Amputation at this point gave, in his opinion, the best results, excepting amputation through the extreme upper portion. The broad base of the flap—two-thirds of the circumference of the limb—was one of its good features. The flap was made wedge-shaped, its base being composed of all the soft parts at the front of the thigh. A very short posterior flap, from two to two and a-half inches long, was also made, simply to allow for the retraction of the muscles. The cicatrix would be sufficiently far back to escape pressure, and the end of the bone would be covered with a thick pad of tissue. The flaps were united by interrupted catgut sutures, rubber drainage-tubes were inserted at the angles, and the usual antiseptic dressing was applied to the stump.

CASE III.—This case, also a young man, apparently in robust health, presented a tumor which had been growing upon the inner side of the left thigh for the past seventeen years, and was about the size of a pea when first noticed. Although the tumor had reached a diameter of nearly seven inches, and was pendulous, it had given him comparatively little inconvenience. It was,

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probably, a lipoma. Slight traumatisms had occasionally caused an increase in its size, probably from interstitial hæmorrhage. As the patient was strongly opposed to taking ether, cocaine anæsthesia was employed, the solution being introduced subcutaneously at a number of points around the periphery of the tumor. The growth was removed by an elliptical incision, and the wound stitched with interrupted silk sutures. A rubber drainage-tube was inserted, the wound dressed antiseptically, and the limb bandaged to a lateral wire splint.

Dr. McBurney said he did not favor the use of cocaine in large operations, for local anæsthesia was not sufficient in case of unexpected hæmorrhage or other accident which might at any time arise; and, beside this, the agent was very uncertain in its action. Quite recently he had given a patient in his office an injection of ten minims of a four per cent. solution of cocaine, and the patient had been made very ill by it for several hours; while the patient just operated upon had received nearly three times this quantity of the drug and had experienced no inconvenience.

On cutting into the tumor after removal it was found to be a pure, small spindle-cell sarcoma. Dr. McBurney said that he did not remember ever having seen a sarcomatous tumor with a history of such long duration, and with such an innocent appearance. The interest of the case was still further enhanced by a comparison with the preceding one, which had existed only ten weeks, and yet had extensively invaded the surrounding structures, and demanded amputation.

CASE IV.—The next patient, a woman, aged twenty-nine years, had received an injury near the knee, when at about her seventh year. This was quickly followed by periostitis, requiring incision for the evacuation of pus. Sinuses remained for some time, and sequestra of considerable size were discharged from time to time. Soon after the injury flexion of the leg began, and for over twenty years it had been flexed at nearly a right angle, and permitted only slight motion. There was considerable atrophy, and a shortening of five and one-half inches. She used crutches, and the limb projecting out behind was not only useless but inconvenient.

The choice of operation lay between an excision of the knee, with the removal of a wedge of bone sufficiently large to allow extension of the leg, and an amputation. The latter was preferable, but the patient would not consent to it. On account of the extensive displacement of the leg backward it would be necessary to remove a large wedge of bone, and this would probably result in a shortening of six and one-half inches. Besides this, success was by no means certain on account of atrophy of the tibia and femur, which made it highly probable that great changes had taken place in the bones.

A free incision was made just below the patella, and the joint opened. As there was no advantage in saving the patella or the lateral portion of the capsule, these were removed. After a sufficiently large wedge of bone had been excised to permit proper alignment, a nail was driven from below upwards into the bones so as to secure greater stability. Ordinarily two nails are employed; but in this case the small size of the bones precluded the safe use of more than one. The wound was united by interrupted catgut sutures, and as it was very desirable that the dressings should not be disturbed for two weeks, two absorbable-bone drainage-tubes were used instead of rubber. A plaster-of-Paris splint, strengthened with narrow strips of thin wood, was applied over the usual antiseptic dressing.

ECZEMA FROM EXTERNAL IRRITANTS. SEBORRHŒIC ECZEMA. SYPHILIS AND PREGNANCY. OTHER CASES.

Abstract of a Clinical Lecture delivered at the New York Post-Graduate Medical School.

BY ROBERT W. TAYLOR, M.D.,
PROFESSOR OF DERMATOLOGY AND SYPHILOGRAPHY.

CASE I.—A boy, nineteen years of age, having had an eruption for the past month, presented himself for treatment, and gave the following history: He had had no previous eruption, except from ivy poisoning, which he said had returned again one year after the first attack, this second attack lasting about four weeks, the face being swollen and covered with crusts. His occupation requires him to handle dyes and cosmetics in the form of liquids and powders. The present eruption, beginning on the hands, had now spread to the neck, hands, arms, and knees, and consisted of small patches of thickened, inflamed, scaly, and fissured tissue, and had the appearance of having been caused by an external irritant. The "relapse" after the poisoning was very probably an erythematous or eczematous eruption. It is not uncommon for such an eruption to follow an attack of severe dermatitis, arising from any cause.

Treatment.—Dr. Taylor said that the first essential to successful treatment was that the patient should either give up his occupation or else protect the hands most carefully from contact with these irritants; and for this purpose, an old kid glove was the most suituble. A rubber glove was useful in a chronic scaly eczema, but in the present condition the poulticing caused by such a glove would probably greatly aggravate the disease. The hands should be freely anointed with the following:

℞.—Balsam of Peru . . . 1 drachm.
Diachylon ointment } of each 1 ounce.—M.
Oxide of zinc ointment }

It would be well also for the patient to wear turn-down collars and soft linen around the neck. If he should wear woolen clothes next to the skin he would be liable to have a return of the eruption.

CASE II.—A young woman, having a chronic and painful ulcer of the leg, was the next patient. The ulcer was indolent and unhealthy, and a few enlarged veins in the popliteal region still further complicated the case. The ulcer was surrounded by a discolored zone of skin, showing an area in which there was a condition of blood-stasis.

Treatment.—In the first place, it was necessary to secure rest, with the limb elevated so as to favor the return circulation. The ulcer should then be dusted with iodoform and cold compresses wet with the following lotion kept upon the parts:

℞.—Solution of subacetate of lead . 2 drachms.
Tincture of opium . . . ½ ounce.
Carbolic acid solution (2 per cent.), sufficient to make . 1 ounce.—M.

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When the acute symptoms have subsided careful bandaging will complete the cure and an elastic stocking will provide against relapse.

CASE III.—The next case, a man twenty-five years of age, was interesting on account of the uncertainty that has until recently surrounded the classification of the disease. Dr. Unna, of Hamburg, deserves great credit for his extensive and painstaking observation upon this subject, which has resulted in a simpler and more accurate classification. Dr. Taylor said the case was a typical illustration of seborrhœic eczema, a disease which begins as a patch of seborrhœa. According to Unna, Brooks of Manchester, and some others, the disease begins most commonly about the head, and is probably caused by microörganisms which invade the sweat- and hair-follicles and are then transferred to other parts of the body. When this patient was a child there was a scurfy condition of the scalp, and later he suffered from eczema. Three months ago a patch appeared upon the penis, which is now much encrusted. At present the whole scalp is covered with yellowish, uneven, hillocky incrustation, with here and there fissures extending down to the corium. The yellowish crusts bear some resemblance to favus, but there is no cupping such as one sees in the latter disease. The eruption terminates abruptly on the forehead, about one inch beyond the margin of the hair, which is a very characteristic feature of the disease. Other patches are found behind the ears, on the neck, between the shoulders, and elsewhere; and everywhere they are oozing, greasy, and of a dirty yellow color.

Treatment.—The general condition of the patient is very important, but it must be remembered that there is no diathesis to combat. An occasional powder of ten grains each of calomel and bicarbonate of sodium at night, followed in the morning by a draught of Hunyadi water was advised. Acetate of potassium in daily doses of thirty grains acts as an aperient and a diuretic, and will relieve the irritation of the skin. Formerly, tarry applications were usually employed locally, but Unna's researches have shown that the best topical remedies are sulphur and resorcin. The patches should be thoroughly rubbed and kept thoroughly moistened with the following ointment:

℞.—Camphor . . . . . 10 grains.
Washed sulphur . . . . 1 drachm.
Petroleum ointment . . 1 ounce.—M.

The scales should be removed as frequently as possible without injuring the skin. In about two weeks the patient should be considerably improved. If, as sometimes happens, the sulphur should prove ineffectual, from twenty grains to one drachm of resorcin will be substituted for the sulphur in the ointment. Twenty grains is usually sufficient.

CASE IV.—The next case was one of great practical interest. The patient, a woman, twenty-three years of age, about eight and a half months advanced in pregnancy, had entered Charity Hospital a few days before. She had a typical hard chancre of the fourchette in the form known as a chancrous erosion, and the inguinal glands were decidedly enlarged. She was probably infected at about seven and a half months of pregnancy, and the outburst of general syphilitic manifestations would be expected about six weeks later. The child might escape infection if born before the appearance of general syphilis, but Dr. Taylor thought that there was a likelihood that the syphilitic fever, if it came on, would induce premature labor, as is often seen with smallpox, typhoid fever, and similar conditions. There is no communication between the mother and child through the utero-placental circulation, so that it is possible for the child to be born perfectly healthy, although there is great risk of infection by the genitals of the mother during its birth. The mother is extremely liable to have a severe perineal laceration, owing to the situation of the chancre. This woman came into the hospital to be cured of syphilis and to be delivered of her child. It was her intention later on to go out as a wet-nurse and, perhaps, to care for her own baby also. Should she do this she would then be in the early and infectious stage of syphilis, and very liable to infect the child she nurses. Being comely and well built, she may present a good appearance, and to the lay eye appear healthy. These facts show how careful we should be in the selection and examination of nurses.

Treatment.—In such cases immediate mercurial treatment is indicated—mercurial ointment to the fourchette, with thorough irrigation of the parts, and mercurials internally, in order to produce a speedy resolution of the syphilitic new-growth.

CASE V.—A man was next exhibited, having more advanced syphilitic lesions than those which had hitherto been shown. The patient had a chancre in October, 1888, and in February, 1889, sore-throat and a general eruption, which in May of that year became papular and pustular. From October, 1889, until the beginning of the present year he was free from these symptoms, as a result of treatment. Dr. Taylor said that the occurrence of a tubercular syphilide fifteen months after infection was not uncommon. About the nose, and on the cheeks, neck, and arms were tubercular patches, showing a tendency to form rings. There were ulcerating syphilides on the legs. The tubercular patches caused some elevation of the skin, were of a somewhat coppery color, and on pinching up a fold of the skin, it was evident that the nodule involved the whole thickness. There was a nodule on the upper lip. If the only lesion were the patch at the side of the nose, one might at first sight take it to be lupus. Just below the lower lip, in the mental furrow, there was a large tubercle about the size of a silver quarter. The surface was warty and elevated at least one-fourth of an inch above the surrounding skin. Owing to the presence of a number of sebaceous glands, and as a result of the chronic inflammation and irritation, the tubercle had become converted into this papillomatous growth known as the "vegetating syphilide." It looks not unlike the dermatitis tuberosa which appears during the administration of potassium iodide, and even resembles slightly inflammatory ringworm, or a large flat "seed wart."

Treatment.—The treatment should be very active. The patches should first be washed with a five per cent. solution of carbolic acid, after which mercurial plaster should be constantly applied to them. Internally the following was advised:

℞.—Biniodide of mercury . . . 2 grains.
Potassium iodide . . . . 6 drachms.
Water . . . . . 6 "
Compound tincture of cinchona, sufficient to make . . . 4 ounces—M.

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Three teaspoonfuls daily, gradually increasing to six teaspoonfuls.

This is the "strong mixed treatment," the ordinary formula containing one grain of the biniodide, and four drachms of the potassium iodide. It is important to remember that if mental or physical depression supervene during the administration of potassium iodide, it is an indication to discontinue the drug immediately.

CASE VI.—The next case was an excellent illustration of the appearance of a small miliary papular syphilide occuring in the negro. The lesions presented a typical conical appearance and were copiously and universally scattered over the whole body. He had iritis, which is a frequent concomitant of this form of syphilide, and the inguinal glands were enlarged. Negroes very commonly exhibit extreme enlargement of the ganglia.

Treatment.—The eye should be protected from light, and a solution of atropine—four grains to the ounce—dropped into it every three or four hours. Inunctions of thirty grains of mercurial ointment were ordered, observing the precautions already mentioned in several previous lectures. Internally tonics should be taken, together with good food.

MEDICAL PROGRESS.

Prescription for Bronchitis.—For cases of acute bronchitis with "tight" breathing DR. ENGLE advises the application of from sixteen to twenty-four dry cups, and the administration of the following mixture:

℞.—Tartar emetic	. . . .	6 grains.
Spirit of Mindererus	. . .	3 ounces.
Fluid extract of glycyrrhiza	.	6 drachms.
Compound glycyrrhiza mixture (filtered) sufficient to make	.	9 ounces.

Two teaspoonfuls of this in half a glassful of water should be taken every two hours, the meals being so arranged that they fall halfway between two doses of the medicine.—*Medical Summary*, June, 1890.

Prescription for Irritable Bladder.—DR. E. L. TUNSTALL recommends the following mixture in cases of irritable bladder:

℞.—Potassium citrate	. . . .	4 drachms.
Fluid extract of triticum repens	. . } of each	1 ounce,
Tincture of hyoscyamus	}	
Fluid extract of buchu	. . .	½ "
Water sufficient to make	. .	3 ounces.

One teaspoonful in a wineglassful of water three or four times daily.—*Medical Summary*, June, 1890.

Acute Œdema of the Glottis following the Administration of Potassium Iodide.—Having observed four cases of œdema of the glottis following the use of potassium iodide, DR. A. GROENOUW offers the following conclusions (*Monatshefte für praktische Dermatologie*, May 15, 1890):

1. In a few cases after the administration of potassium iodide œdema of the glottis, with dyspnœa, suddenly supervenes, and demands immediate tracheotomy.

2. This symptom is not produced only by the administration of large doses or by the long duration of its use; on the contrary, the dyspnœa may appear after a relatively small dose, and even within a few hours after the administration.

3. Other symptoms of iodism are often absent.

4. This œdema is probably due to an idiosyncrasy of the individual, and not to impurities in the drug.

The Treatment of Chlorosis.—DR. WILLIAM AINSLIE HOLLIS (*British Medical Journal*, May 31, 1890) writes that in the treatment of chlorosis (or, as he terms the disease, chloræmia) no drug has given such good results as the carbonate or the freshly powdered saccharate of iron. He advises the large doses of one drachm of either preparation given after meals. Under this treatment he has repeatedly observed the hæmoglobin increase 20 per cent. and more in the course of a week. If the stomach is irritable, these large amounts may, at first, produce nausea, which, however, usually subsides. If it does not, it is advisable to give the powder in an effervescent mixture. With this treatment the smaller the percentage of hæmoglobin the more rapidly is the iron absorbed. After the first week the increase of hæmoglobin takes place more slowly, and in all the cases under Dr. Hollis's observation it was impossible to increase the hæmoglobin more than 80 per cent. In most cases these large amounts of iron regulate the bowels, so that laxatives are not necessary. If constipation should occur, it can be overcome with cascara sagrada better than with any other drug.

Coincidently with the improvement in the amount of hæmoglobin there is a slight increase in the number of red blood-corpuscles.

The Treatment of Placenta Prævia.—DR. ALDERSON considers separation and removal of as much of the placenta as possible the most satisfactory method of treating the majority of cases of placenta prævia. The mere irritation of the operation is sufficient, in many cases, to stimulute the uterus to contraction, and thus to check hemorrhage.

If the membranes are ruptured, and the os dilated sufficiently to permit the safe introduction of the hand, and if the woman is not already exhausted by flooding, version is perhaps the safest, and certainly is the most rapid way of terminating labor. But if there has been much loss of blood, or if the patient is prostrated, delivery with forceps is safer, separating the entire placenta, if within easy reach.—*Provincial Medical Journal*, June, 1890.

Mixture for Chapped Hands.—According to the *Times and Register*, the following is a useful application for chapped hands:

℞.—Menthol	. . . .	12 grains.
Salol	. . . .	30 "
Olive oil	. . . .	30 minims.
Lanolin	. . . .	1½ ounces.—M.

Apply twice daily.

Resection of Intestine at Three Points for Cancer of Sigmoid Flexure.—DR. THEODORE KOCHER, of Berne, reports a case of cancer of the sigmoid flexure in which the involvement of several loops of the intestine made it neces-

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sary to resect the bowel at three places (*Correspondenzblatt f. Schweizer Aerzte*, April 1, 1890). After exposing the cancerous mass one loop of the small intestine was clamped, cleansed, and divided. The mesentery was then cut through, and the divided ends of the bowel were united with a continuous suture. The second intestinal loop was treated in the same manner, the mesocolon was divided, and the cancerous mass was removed entire. This was followed by very free bleeding, which was, however, finally controlled. The seat of the growth was then temporarily packed with sublimate compresses, after which the cavity was irrigated with sterilized salt solution. The sutured small intestines were then replaced in the abdomen, but as it was impossible to suture the large intestine satisfactorily it was brought out of the wound, and a strip of iodoform gauze placed under and around it, the peritoneum being sutured beneath. Recovery was uneventful, and the patient returned to his home about seven weeks after the operation, though a small fistula persisted, through which only gas escaped.

The tumor was about the size of a child's head, and microscopic examination proved it to be cancerous.

In the same paper Kocher reports his results in the treatment by resection of gangrenous strangulated hernia, excluding cases in which general peritonitis was present at the time of the operation.

When carbolic acid was used, and before the principles of antisepsis were thoroughly understood, he performed 12 resections for this condition, with 9 deaths. One of these deaths was due to pulmonary embolism, one to sepsis, and seven to peritonitis.

Two resections were performed with zinc chloride as an antiseptic, one case recovering.

Then came the period of strict antisepsis with corrosive sublimate, with 13 resections and 11 recoveries.

To obtain the best results Kocher advises that the resection should be done through healthy tissue, the portion removed having approximately a wedge shape. Two continuous sutures are used to unite the divided ends of the bowel—a deep suture including a small portion of the mucous coat and a superficial suture through the serous coat only. If the suture does not unite the bowel properly, as in the above reported case, Kocher brings the sutured portion out of the wound and surrounds it with iodoform gauze.

The Cold Bath in Scarlet Fever.—The good effect of cold immersion in severe scarlet fever was well illustrated in a case related by M. DIEULAFOY at a recent meeting of the Paris Hospitals Medical Society. The patient, a girl sixteen years of age, on the sixth day of the fever was attacked by marked nervous symptoms, excitement, insomnia, and suppression of urine—the pulse ranging from 120 to 150, and temperature very high. On the eighth day her condition was very grave, the eruption had disappeared, the temperature was 105.6° F., pulse irregular and intermittent, and the prostration extreme. In spite of the fact that she was menstruating, Dieulafoy advised the cold bath, and after some delay the friends of the patient permitted the measure. She was placed in a bath at 75° F., which caused severe shivering, cyanosis, and coldness of the extremities. But the pulse-rate fell from 150 to 100, and the delirium ceased. At the end of fifteen minutes she was removed from the bath, which was repeated three times during the night, at higher temperatures. This treatment was continued up to the eleventh day, when the body temperature became normal. M. Dieulafoy advocated the bath in all malignant forms of fever, and its good effects in scarlet fever were endorsed by MM. Johel-Renoy and Duponchel, who had obtained similar good results. Dr. Huchard advised caffeine injections for the collapse.—*Lancet*, May 24, 1890.

Unusual Modes of Infection with Syphilis.—DR. R. W. TAYLOR reports a number of cases illustrating the variety of methods by which syphilis may be acquired (*Journal of Cutaneous and Genito-urinary Diseases*, June, 1890). The most singular of the series is the following:

A lady, aged thirty-six, in perfect health, lived with her husband, and with them a lady friend resided as a companion. In July, 1886, the mistress of the household complained of an ulcer on the lower right eyelid near the inner canthus, which gave her great uneasiness and inconvenience by reason of the constant lacrymation. When first seen by Dr. Taylor this lesion presented a characteristic nodular induration and a raw exulcerated surface. The corresponding ante-auricular ganglion was much enlarged, while those of the neck were less hyperplastic, though later they all became markedly enlarged and typically syphilitic. A diagnosis of syphilitic chancre was made at once, but the question of its source was then unanswerable. After much inquiry and questioning it was ascertained that the lady's maid had been suffering from syphilis for some months, and that just prior to the infection of her mistress she had had pharyngeal and labial mucous patches. All possible modes of mediate infection suggested by the case were examined into, and it was finally decided that infection must have occurred by means of a towel, for the servant after a time reluctantly confessed that she had several times wiped her mouth with the "corner of a towel."

The initial lesion on the lady's eye yielded kindly to treatment, and in due time was followed by general secondary manifestations. Under treatment these disappeared, and for about six months the patient passed from observation. Toward the latter part of this period she was very negligent in following the prescribed treatment, and when next seen she was in great mental distress, and told the following story: She had for two or three months suffered from sore mouth and tongue, but had faithfully used a gargle (bichloride, tincture of myrrh, and water) which had been given her. At irregular intervals she had used chewing-gum very freely during the day, and once or twice noticed, on removing it from the mouth, that a little blood adhered to it. On two occasions when she was thus chewing gum she had temporarily placed her bolus on some article of furniture, from which it had been taken by mistake and chewed for some time by her female companion. As she had received stringent instructions as to the prevention of the spread of the disease to her husband and her companion, she was on each of these occasions somewhat troubled in mind and on the alert. For two weeks her companion had complained of a sore just within the lower lip on the right side, which had failed to disappear

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under the use of borax, alum, and other domestic remedies. The lady's friend was in total ignorance of the nature of her trouble, but stated that in brushing her teeth a few weeks before she had abraded the lip, so that it was painful, and that the sore thus produced had not healed. Examination revealed a typical indurated chancre of the lower lip and marked submaxillary and cervical adenopathy. In due time roseola and rheumatoid pains ushered in the secondary period of syphilis.

Other cases are reported showing that syphilis may be acquired while making an autopsy on a syphilitic subject; that it may be inoculated by a caustic-holder which has been used in the treatment of syphilitic lesions; and that handkerchiefs, bathing-suits, syringes, adhesive plaster, water-closet seats, pillows, and razors may each be the medium of infection.

The Abortive Treatment of Gonorrhœa.—Two papers were recently read upon this subject at the Society of Practical Medicine of Paris.

DR. MALÉCOT discussed the treatment by injections of nitrate of silver. He regards the prejudice against the employment of silver as unreasonable, if the salt is properly applied, but he considers the strong solutions dangerous, especially if used for several days in succession. They may provoke discharge of blood, and their too energetic action may diminish the subsequent elasticity of the canal. Furthermore, with the piston syringe the sphincter may be forced and the caustic be uselessly injected into the bladder. He therefore recommends the olive-bulb instillator, which is introduced as far as the muscular sphincter. The additional sensation of resistance here felt serves as an indication that the instrument has gone far enough.

The patient first urinates, then the canal is washed out with a feeble boric acid solution, and the instillation made—the first day in strength of 1 to 50, and the following days 1 to 100 or 1 to 150, the solution being retained in the urethra for two or three minutes. The irritant action is of short duration, and affects only the epithelial layer of the mucous membrane. It is recommended to wash out the urethra with some antiseptic solution in the intervals between the acts of urination such as the permanganate of potassium, resorcin, or bichloride, the latter not stronger than 1 to 10,000 or 1 to 20,000.

Dr. Malécot has obtained excellent results from the salicylate of mercury in strength of ¼ grain to 3 ounces of water, at a temperature of about 100° F. It is a strong antiseptic without being painful. Internal treatment is not wholly neglected, sandal oil, copaiva, etc., being given in the belief that they undergo a change in the economy by means of which they become germicidal. He has also followed Dreyfous in the employment of salol in daily doses of 1½ drachm with the same object in view.

Following out this plan, a recent gonorrhœa may often be aborted and without danger. Only violent inflammation of the urethra should cause one to suspend the treatment. In some cases, without known cause, the method fails.

DR. PICARD entered into the question of the efficacy and harmlessness of abortive injections of the nitrate of silver. If we examine into the action of a sufficiently concentrated solution of nitrate of silver we see that it acts upon the mucous membrane of the urethra just as the gonorrhœal virus acts, causing death and desquamation of the superficial epithelium. The difference between their actions, which explains the efficacy of the treatment, is the rapidity with which the silver acts, destroying the epithelium at once, while the virus requires several days to effect the same result. The success of the treatment therefore depends upon the promptness of its application. It should be made when the first symptoms appear—that is to say, before the appearance of pus. In practice it is at the time that the patient feels an itching sensation in the fossa navicularis, and perhaps notices a drop of clear fluid at the meatus, that the treatment must be instituted. A red meatus, with the lips swollen and everted, turgidity of the glans, and great pain, are contra-indications to the employment of the abortive method. If these parts are normal and the pus is not too abundant and thick, the silver may still be used. The solution he recommends is of a strength of 1 to 25 or 1 to 30. The pain occasioned is usually moderate. Twenty-four or thirty-six hours after the first injection, if the discharge persists, a second should be used, provided the parts are neither red nor painful.—*Journal of Cutaneous and Genito-urinary Diseases*, June, 1890.

Capsicum as a Counter-irritant.—DR. HENRY J. BUCK (*Lancet*, May 31, 1890) thinks that capsicum is one of best counter-irritants. He uses an infusion prepared by macerating a handful of the crushed pods in hot water for an hour. The liquid is then strained and bottled for use. The addition of a small amount of Cologne-water will prevent the infusion from decomposing. A piece of lint soaked in this, applied to the skin and covered with gutta-percha tissue, may be left in position for hours without fear of blistering. The application is particularly beneficial in cases of muscular rheumatism, acute torticollis, neuralgia, etc. In cases of "relaxed sore-throat" instant relief is often obtained by painting the uvula and pharynx with the infusion.

A stronger lotion may be prepared, which will produce sufficient irritation if simply painted upon the skin with a camel's-hair brush.

Patients should always be warned to wash their hands immediately after using the lotion, as it is, of course, exceedingly irritating to the eyes.

Potassium Permanganate in Snake-bites.—DR. ARKHANGELSKY states that he has successfully treated many cases of poisonous snake-bites by means of interstitial injections of a one per cent. solution of potassium permanganate, as recommended by Lacerda (*Meditzinskoïe Oborenïe*). Two or three syringefuls of the solution are injected above the bite, the point of the needle being directed toward the wound. At the same time a syringeful of ether is injected in the epigastric region, and brandy or wine, and ammonium carbonate are administered by the mouth. The permanganate injections are used by the author in cases of scorpion and spider stings also. In the latter forms of poisonous wounds this treatment acts more rapidly than any other in dispelling the symptoms.—*Provincial Medical Journal*, June, 1890.

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THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, JUNE 21, 1890.

OREXIN.

ONE of the most judiciously conducted investigations recently reported is that of MARTINS (*Deutsche medicinische Wochenschrift*, No. 20, 1890) upon the value of orexin in stimulating the appetite. It will be remembered that Penzoldt introduced this drug, the chemical name of which is dihydrophenylchinazolin, as an agent of great use as a veritable stomachic, promoting appetite and digestion. The value of a medicament which could be depended upon for this purpose needs not to be emphasized. To test the claims made for orexin the studies here commented upon were made. Following the precedent of Rosenbach in that investigator's trials of hypnotic medicaments, Martins took every precaution to exclude the psychic factor which so often misleads in experiments of this nature.

In the first place, in order to prevent the patients from knowing that the state of their appetite was the subject of investigation, they were asked innumerable questions relating to all their organs and sensations, and the "endeavor was made, if possible, to concentrate their attention upon headaches, sleeplessness, or some other indifferent symptom, rather than the one under observation."

In the second place, observations were made upon the effect of pills of althea exactly resembling in size and appearance the orexin pills which were employed. Both kinds of pills were gelatin-coated and the patient was directed to swallow them as quickly as possible, so that no information could be gained through the sense of taste.

Other measures were also employed at the same time, such as ice-bags, mustard plasters, and the like, so that the patient did not know exactly what action was being inquired into. Another method was to give indifferent pills to patients suffering loss of appetite in such a way as to suggest that improvement of the appetite was the object sought. Patients who improved under this treatment were excluded from further observation, while those who did not improve were afterwards given the genuine orexin. In this way Martins was able to assure himself that whatever result was observable was due to the treatment and not to any influence upon the mind of the patient. In twenty-nine cases studied the appetite was improved in five, but not materially; in the other twenty-four the orexin appeared to be without influence upon the appetite. In five other cases in which orexin had appeared to have caused increased appetite, equally favorable results were obtained by the administation of pills which did not contain the drug. So far, then, as Martins's researches go, the predictions of Penzoldt have not been confirmed.

SPECIAL HOSPITALS FOR TUBERCULOSIS.

DURING the past few years the belief that the bacillus tuberculosis is the cause of consumption and not its result, has obtained so firm a hold in the minds of most advanced medical men, that the prevention of consumption by the isolation of persons suffering therefrom has become an important subject for discussion, not only among physicians but amongst those of the laity who are actuated by sufficiently philanthropic motives to be interested in the prevention of disease in their fellow men.

Not only is this true, but tuberculosis affects the rich and poor with such equal frequency and with such fatal effect that every man, woman, and child, in almost every part of the world, is forced, by necessity, to pay attention to its ravages.

Experiments recently carried out under the direction of Professor Koch, of Berlin, which have been supplemented by others performed in other portions of Germany, England, and this country, all show that the mortality of consumption amongst nurses taking care of such patients is greater than amongst a similar class in charge of non-tuberculous inmates

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of hospitals. It has also been proved that it is possible to scrape the walls of a room in which a tuberculous patient has lived, and with that dust to produce tuberculosis by inoculation in rabbits, and we are speedily finding that the "white plague" of phthisis is to be prevented by isolation and hygienic measures. Further than this, it is not going too far to express the hope that scientific medicine may eventually crush out this disease as it has already limited the ravages of smallpox by the practice of vaccination.

In this city attention has been called to this subject very recently by the exhaustive and very able paper read before the College of Physicians by DR. LAWRENCE FLICK, in which he discusses the subject of hospitals for tuberculosis and describes the buildings and methods of administration of the various hospitals of this character which are found in England and on the Continent. He also dwells upon the importance of the establishment of hospitals for consumptives in this country, and we agree with him perfectly in the assertion that physicians and hospital superintendents have no right to place in the same wards with other cases persons suffering from pulmonary tuberculosis.

At the same time so many cases of this disease seek admittance to hospitals, and need medical care in many cases so acutely, that it is practically impossible to exclude them from the general hospitals as long as no special hospitals exist.

In view of these facts, it seems to us that a pressing need exists for the building of an institution of this character, and we can but express the hope that many of the charitably inclined people of this city will remember the necessities of this very large class and provide for them either during their lifetime or in their wills.

EDITORIAL CHANGE IN "THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES."

THE MEDICAL NEWS is informed that upon the completion of the July issue, DR. I. MINIS HAYS will retire from the editorial chair of the *American Journal of the Medical Sciences*, and that DR. EDWARD P. DAVIS will be his successor. Under the guidance of the Drs. Hays, father and son, for sixty of its seventy years, the *American Journal* has attained a preëminent place among the world's medical periodicals, and has been the medium through which our greatest medical thinkers have laid before the profession their most important contributions. Dr. Davis receives his editorial charge in a position of high esteem both at home and abroad, and brings to his arduous duties the qualifications of ample ability, preparation, and energy. We bespeak for him the hearty support of the profession.

REVIEWS.

THE REFRACTION OF THE EYE: A MANUAL FOR STUDENTS. By GUSTAVUS HARTRIDGE, F.R.C.S. Fourth Edition. Philadelphia: P. Blakiston & Co., 1890.

THE first edition of Hartridge's little work on refraction appeared in 1884, and was soon exhausted. The fourth edition is enlarged, revised, and better able than its predecessors to fill the want the existence of which has been amply proven. In comparing this with the first edition we note forty-four more pages of reading matter and nine additional illustrations, besides new tables and some excellent plates of the eye-ground characteristic of high grades of myopia. There is also the correction of an error in omitting the words "having previously corrected any ametropia which may exist in his own eyes" (the observer's) which may be found under Retinoscopy, page 65 first edition. Much more space is allotted to the explanation of the use of the plane mirror in retinoscopy, and due credit given to Dr. Edward Jackson, of Philadelphia, for his article in *The American Journal of the Medical Sciences*, April, 1885, on this subject—the author showing his appreciation of this method by quoting the article at some length.

Difference of opinion exists among ophthalmic surgeons in the treatment of hypermetropia, as to how much, if any, latent hypermetropia should be allowed to remain uncorrected. The author advises the correction of the manifest and one-fourth of the latent, and this perhaps is as nearly correct for the average case as an arbitrary rule can be, but in the opinion of the reviewer, this law cannot be safely followed in low or even moderate degrees. The strength of the glass must depend on the power of accommodation, and it is well known that patients of the same age show great variation in this power. Hence it must follow that in order to derive the greatest benefit for the longest time from his glasses, each patient should have the strongest correction that can be comfortably worn, and that as seldom as possible should he be burdened with two sets. Another criticism might justly be made. On page 234 is cited a case of hypermetropic astigmatism, R., L. + 1^c ax. 180° = $\frac{6}{VI}$, as developed under atropine. "After the atropine had passsed away, R., L. — 1^c ax. 90° = $\frac{6}{VI.}$ This correction was given for constant use." According to the text it can only mean that the minus cylinders were ordered, yet this is incredible, for while vision might be temporarily improved, these glasses must induce tonic spasm of the ciliary muscle, asthenopia, and headache. No mention is made of mydriatics other than atropine except in one instance in a clinical record. The author might properly have included a comparison of atropine, duboisine, homatropine, hyoscyamine, and others.

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The work is a valuable one to the student of ophthalmology. He will find in its pages clearly-expressed and well-defined directions which he can follow with safety and profit. The publishers' work is well done. Legible print and good thick paper are used, and no typographical errors are noticed.

DISEASES OF WOMEN AND ABDOMINAL SURGERY. By LAWSON TAIT, F.R.C.S. Edin. and Eng., LL.D. Vol. I. 4to., pp. 540. Philadelphia: Lea Bros. & Co.

THE profession is to be congratulated upon the publication of Mr. Tait's most recent opinions, experiences and results. His preface apologizes for the addition to the mass of medical literature by stating that his chief object has been to offer the results of his own experiences in as condensed form as possible. He also pays a fitting tribute to the ability of our American surgeons—"who have done so much to aid me in what has been accomplished." The present volume treats of the anatomy, physiology and surgical treatment of the uterus, ovaries, urethra, bladder, broad ligaments and Fallopian tubes. Mr. Tait reserves, however, the chapter upon Ovariotomy for Volume II. This volume, as indicated by the "Table of Organs Concerned," following the title-page of Volume I., will also discuss Abdominal Surgery proper, the organs being taken up in the following order: Surgery of the Pelvic Bones; Liver and Gall Bladder; Kidneys, Spleen, and Pancreas; Colon, Rectum, Cæcum, and Small Intestines; and the Breast. The introductory chapter discusses very thoroughly the anatomy of the external organs of generation, and the illustrations, though many of them are old, are well chosen. In speaking of laceration of the cervix and perinæum, Mr. Tait rather upbraids (and we think justly) those who claim that much of woman's ill health is *not* to be attributed to such accidents of parturition, but we cannot agree with the distinguished author in belittling Emmet's operation for torn perinæum in that it makes only a "skin perinæum," for it is just this latter objectionable feature which Emmet obviates. Mr. Tait's operation is well described and the two diagrams are fairly explanatory though his directions for its performance are scarcely sufficient for a beginner. The views formerly held by the author upon extra-uterine pregnancy, as well as his practice and favorable results, we are glad to find are unchanged.

Much of the book is devoted to tubal diseases and many valuable statistical tables are here incorporated. From these we find that in the removal of uterine appendages for salpingitis the author has a fatal result in but 2.5 per cent. of his cases. Mr. Tait does not find that electrolysis, which is being somewhat urged as a cure for uterine growths, is of much use. He says: "If it should prove that in the future uterine myomata can be cured . . . by any means short of a surgical operation, no one will rejoice more thoroughly than I shall. It is by no means clear . . . that the electric current is without harm, whether the diagnosis is correct or not, and it is equally without proof that it is sufficient to produce the effect desired."

The press-work and numerous illustrations are well executed, and many readers will undoubtedly anxiously await the appearance of the last volume.

A NEW MEDICAL DICTIONARY: INCLUDING ALL THE WORDS AND PHRASES USED IN MEDICINE, TOGETHER WITH THEIR PROPER PRONUNCIATIONS AND DEFINITIONS. By GEORGE M. GOULD, B.A., M.D. Philadelphia: P. Blakiston, Son & Co., 1890.

AN analytical review of a dictionary is impossible unless the book has been long used, but an examination of the work of Dr. Gould shows that it has been carefully prepared, is surprisingly complete, and fairly consistent in orthography. We say *fairly* consistent, for, in a few instances, there seems to be some hesitancy in the use of diphthongs; for instance, *peritonitis* is defined *inflammation of the peritoneum*, while *intraperitonæal* is defined *within the peritonæum*. *Epistaxis* is said to be *hemorrhage* from the nose, and on turning to *hemorrhage* we are referred to *hæmorrhage*.

Particular attention has been given to the words added to medical literature within the past few years as a result of the rapid development of the specialities and of bacteriology. In connection with the latter, Massé's invaluable tables of the principal characteristics of the more important bacilli and micrococci are given.

The "make up" of the book would, perhaps, have been better had these tables, as well as the tables of the nerves, bloodvessels and muscles, been relegated to the appendix; indeed, it is questionable if anatomical tables should have any place in a dictionary, for the data can be easily obtained from any text-book on anatomy. However, it is a mere matter of individual preference, whether one would rather look for the origin of a nerve or the insertion of a muscle in his dictionary or in "Gray." The information will be more quickly obtained from the former, but the details will be more complete in the latter.

It is also rather startling to find that the appendix is largely composed of a descriptive list, furnished by another author, of the mineral springs of the United States.

However, no book is exactly to the liking of every buyer, and what to us may seem minor faults, to others may be strong recommendations.

The dictionary, on the whole, is an excellent production. The publishers' work is particularly good, the volume being bound in such a manner that it will remain open at any page desired.

ESSENTIALS OF DISEASES OF THE SKIN, INCLUDING SYPHILODERMATA. ARRANGED IN THE FORM OF QUESTIONS AND ANSWERS, ESPECIALLY PREPARED FOR STUDENTS OF MEDICINE. By HENRY W. STELWAGON, M.D., PH.D. With 74 illustrations. Philadelphia: W. B. Saunders, 1890.

THIS is another one of the series which we have already noticed several times in the columns of THE MEDICAL NEWS, and, without any desire to repeat the praises which we have already sung, we wish to compliment Dr. Stelwagon upon the ease and grace with which he has concentrated a very large amount of information in a comparatively small space. Considering the price and the style of the book the illustrations are unusually good, and we doubt not but that it will rapidly become a favorite among those students who must pass an examination in dermatology before obtaining their degree. Sufficient attention is also paid to treatment to make the

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book of value to the ordinary practitioner who does not care to wade laboriously through the larger works upon dermatology, which, of course, are far superior to the one before us as scientific guides.

SAUNDERS'S QUESTION COMPENDS: ESSENTIALS OF GYNECOLOGY. By EDWIN B. CRAGIN, M.D. 12mo., pp. 192. Philadelphia: W. B. Saunders, 1890.

THE Saunders's Question Compends are already so well known that the one before us requires but few words. Like the others, it will assist the student in acquiring a large number of facts; but we fear facts acquired by this method are easily forgotten. However, if students will have compends, let them be good ones, and the "Essentials of Gynecology," it is safe to say, is one of the best in the series.

CORRESPONDENCE.

LONDON.

Dr. Sansom on "The Rapid Heart." Cystotomy for Tubercular Disease of the Bladder. Optic Atrophy in Tobacco Poisoning. Injuries of the Spinal Cord. Thrombosis of Longitudinal Sinus. Hospital Changes.

To the Editor of THE MEDICAL NEWS,

SIR: The Medical Society, which is one of the oldest if not the oldest medical society in London, adheres to the long-standing custom of giving an annual entertainment in the shape of a *conversazione*, beginning with an oration by some prominent member of the profession; this year Dr. Sansom was chosen, and took for his subject "The Rapid Heart." His Lettsomian lectures before this society on valvular diseases of the heart are probably well known to many of your readers. On the present occasion he restricted himself to the consideration of cases in which undue rapidity of the cardiac action was the only morbid phenomenon, and he gave the following list of affections in which this condition is met with: 1. Graves's disease, in which the cardiac involvement is the chief source of danger. 2. The irritable heart of soldiers, noticed and described by Da Costa, one feature of which is that although the pulse-rate is perceptibly quickened the breathing remains normal or nearly so. This often results in cardiac hypertrophy or dilatation, and is peculiarly common in times of great political or social excitement. 3. The rapid heart of osteo-arthritis especially described by Dr. Spender, of Bath. 4. The rapid heart without noticeable morbid conditions, for our knowledge of which we are mainly indebted to Dr. Bristowe. He laid stress upon the fact that the latter cases are not paroxysmal, and that there is often no palpitation, and no marked distress nor discomfort, but that notwithstanding this apparent mildness the condition is serious and even dangerous, for of seven cases recorded by Dr. Bristowe, no less than five proved directly fatal. The pulse-rate in these cases varied from 110 to 260, and in many the onset was attributed to physical or mental overstrain; in others the symptoms developed gradually, and were associated only with vague dyspepsia; restlessness and insomnia were common. His chief recommendation in the way of treatment is the application of the continuous current over the region of the great nerve-centres.

At a recent meeting of the Clinical Society, Mr. W. H. Battle read an account of a case in which the bladder was opened for the cure of tubercular disease. The patient, a girl aged twenty years, came under observation while suffering from cystitis of several months' duration. Under an anæsthetic the urethra was dilated and the finger then detected an ulcerated patch near the base of the bladder, measuring 2 inches by 1½ inches. This was scraped with a Volkmann's spoon; subsequently the interior of the bladder was examined with the aid of the cystoscope and the ulcer was seen to be still present, though smaller. Scraping was again resorted to. Three months later, the improvement having been only temporary, suprapubic cystotomy was performed, the ulcerated portion exposed and scraped, and a solution of chloride of zinc (30 grains to the ounce), was applied to the surface of the ulcer. A catheter was then passed into the bladder through the urethra, the wound was dressed with iodoform and sal alembroth and a drainage-tube put in. The patient continued to make satisfactory progress and left the hospital on the fifty-third day after the operation; she has been seen since and remains well. The scrapings were examined microscopically and showed caseous degeneration of a tubercular deposit, but no bacilli.

Ever since tobacco amblyopia was definitely recognized as a distinct form of disease it has been very generally taught and believed that the smoker has only to give up his tobacco when his optic nerves will in time recover their function. A paper, however, by Mr. Lawford, recently read before the Ophthalmological Society, tends to shake our faith in this comforting dogma. He reported nine cases of optic nerve atrophy, which, in the early stages, closely resembled that due to tobacco poisoning. All the patients were men and smokers, and usually consumed a large quantity of tobacco. Treatment by abstinence from tobacco and the administration of nervine tonics led to no improvement, and in most of the cases the sight became progressively worse. There was gradual failure of vision with central negative scotomata for form and color, and the temporal half of the optic disc showed slight pallor. The chief point in which these cases differed from ordinary cases of tobacco amblyopia was in the peripheral limitation of the field of vision, the field in the latter affection being usually normal. Most of those who took part in the discussion regarded the cases as instances of tobacco poisoning, and Mr. Edgar Browne, who has already done much good work in this direction, pointed out that similar optic nerve disease in non-smokers was not known.

At the recent annual meeting of the Association of Medical Officers of Schools, the subject of the epidemic of influenza was selected for discussion, and Dr. Symes Thompson was invited to open the debate. The chief fact brought out by the discussion was the general unanimity of opinion that the disease is spread by contagion. Another point, perhaps not quite so clearly made out, is the comparative immunity of young children; thus at the Foundling Hospital, out of 317 inmates, 95 were affected; whilst at Haileybury, one of the public schools, 60 per cent. were attacked. All agreed that, apart from complications, keeping the patient in bed is the only

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treatment necessary. The epidemic is now virtually at an end in London, but one still hears of stray cases, mostly second attacks, which, by the way, are at least as severe as the original attack.

For years we have been threatened with a commission on the hospitals of London, and at last there is a select committee of the House of Lords at work. The terms of the motion under which the committee was appointed were rather vague, and it is not very easy to see what is expected to be the result of the inquiry. Apparently those who have been loudest in their demands for investigation are by no means unanimous as to what they hope to gain by it, and thus far the evidence tendered and the questions asked do not make the object clearer. That a great deal of harm is done by the indiscriminate way in which hospital letters are given without inquiry as to whether the recipient is a deserving person cannot be doubted, but if the voluntary system is to be continued, and we are assured that no one wishes the hospitals to be placed under State control, it is not easy to see how we are to dispense with governors' letters. The subscribers must have something in return for their money, for the majority of them are by no means actuated solely by motives of charity. The chief complaint is from the general practitioners, who say that the gratuitous treatment in the hospital out-patient rooms deprives them of a number of patients, but it will be very difficult to adjust this undoubted grievance without endangering the facilities for clinical teaching.

An important and practical paper on injuries to the spinal cord was contributed by Mr. Anthony Bowlby at the last meeting of the Royal Medical and Chirurgical Society, subverting some general but erroneous beliefs upon the subject. He had records of eleven cases of complete crushing of the spinal cord in which especial attention had been paid to the condition of the tendon-reflexes. In all of these cases the limbs were quite flaccid, the tendon-reflexes were abolished and ankle clonus and rigidity were absent; in most of the cases the superficial reflexes were also lost, but not in all, and in some cases the superficial reflexes subsequently returned. In three instances where the crushing of the spinal cord was not complete, the reflexes were found increased. Mr. Bowlby draws the inference that when the deep reflexes are abolished there is presumably complete crushing of the spinal cord; that such cases are not amenable to operative interference; and that an operation is likely to be of use only when the deep reflexes are not wholly abolished and when, therefore, the cord is not completely crushed or severed.

In regard to the condition of the superficial reflexes and the date of their return, he said that in a considerable number of cases they did not return at all, and when they did, it might be either almost immediately or not for months. He attached no importance, for diagnostic or prognostic purposes, to the presence or absence of the superficial reflexes. His paper included ten other fatal cases of spinal-cord injury, and he was careful to point out that in all the twenty-one cases there was no compression of the spinal cord by displaced vertebræ or any other condition amenable to surgical treatment. He believed that the crushing of the cord took place at the moment of the injury by the temporary displacement of the bodies of one or more vertebræ, and that the displaced bone was spontaneously restored, so that compression was not kept up. He thought it possible that an injury short of complete crushing of the cord might cause the disappearance of the deep reflexes, but declined to make a dogmatic statement upon the subject.

Dr. Bastian, who a short time ago called attention to the fact that in total transverse lesions of the cord the reflexes were abolished, pointed out that in cases of disease of the spinal cord he had found that where tactile sensibility was abolished, but painful sensations persisted, the reflexes were not abolished.

Dr. Langley Browne, who had seen a good many cases of injury to the spinal cord, thought that in all cases where the reflexes are not wholly abolished the important thing is to prevent movement at the seat of injury, and he recommended the immediate application of a plaster jacket. He narrated some very satisfactory results where this mode of treatment had been adopted.

At the last meeting of the Clinical Society, Mr. Arbuthnot Lane described a case of complete thrombosis of the longitudinal sinus which was diagnosed during life. The patient was a child aged two years, who had a depressed fracture immediately above the lambdoid suture in the vicinity of the groove of the sinus. The depressed bone was partly removed and partly elevated, a vein being ligatured at its entry into the sinus, which, however, sustained no injury. On the second day after the operation convulsive movements appeared, first on one side, then on both; following the movements there was a condition of apparent paralysis, which was at first partial, but soon became general and was accompanied after a time with drowsiness, which soon developed into coma. The child died on the third day after the injury. There was no optic neuritis, from which fact it was inferred that neither lateral sinus was thrombosed; it was supposed that the clotting in the sinus was consequent upon the formation of a clot at the orifice of the vein that was ligatured at the time of the operation. On post-mortem examination thrombosis of the superior longitudinal sinus and of some of the superior cerebral veins was found, and as the oldest part of the clot was considerably in front of the fracture it was thought that it must have been independent of the original injury. Mr. Lane based his diagnosis on the symptoms of cortical irritation with subsequent paralysis and the known injury to a vein during the operation.

An unusual number of changes have taken place on the medical side of some of our hospitals quite recently. In fact, the current medical journals announce vacancies at no less than four. At Guy's Hospital the retirement of the senior physician, Dr. Pavy, has caused Dr. Hale White to become full physician after an unusually short period as assistant physician. He is by far the junior in years of all the full physicians at the metropolitan schools, and has been exceptionally fortunate in obtaining his promotion so rapidly. Dr. Sansom has succeeded Dr. Langdon Down at the London Hospital, and has had much longer to wait for his step, but at this hospital the assistant physicians have the very unusual advantage of having a considerable number of beds at their disposal. At Charing Cross Hospital the unexpected death of Dr. Julius Pollock, after a few days' illness from pleuro-pneumonia, has given Dr. Abercrombie the full physiciancy some years earlier than he would have attained it in the ordinary course of events; whilst a vacancy has also occurred at St. Mary's, by the

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very sad suicide of the junior assistant physician, Dr. Walter Pearce. He had hardly been at work long enough to make a name for himself outside of his own hospital, but he was very highly esteemed by all with whom he came in contact. He shot himself a few days ago after seeing his out-patients at the hospital. He had been exceedingly depressed for some time past, and several years ago had had a similar attack, so that those who knew him best, though naturally greatly distressed, were not much surprised at the sad occurrence. At all the metropolitan schools provision is made for the retirement of the seniors either after twenty years on the full staff, as at the London, St. George's, and St. Mary's, or on attaining the age of either sixty or sixty-five years, as at most of the hospitals. It is difficult to say which is the best arrangement—the latter probably suits the juniors best, but it is very hard in some cases, as a man is often kept in the out-patient room until he is long past forty. All are agreed, however, that some retiring scheme is necessary, and, practically, both these plans work pretty well.

VIENNA.

To the Editor of THE MEDICAL NEWS,

SIR: Medical students abroad have the choice of various centres in which to work, each with its peculiar teaching and imparting its peculiar impression. For this reason the smaller places offer distinct advantages; as there the combined influence of the greater schools is felt, while in Vienna and Berlin nothing is recognized which has not first received the stamp of local approbation. In Vienna one hears of what is thought in "Deutschland," but always in contrast to the superior teaching of Vienna. The student who can spend, however, only a short time abroad, who knows what he needs to study, and who can confine himself to the proper number of courses, will find Vienna the best place, because the courses are numerous, conveniently situated, and various.

The clinics of Braun and Chrobak offer more material than those at the Frauen-klinik in Munich, but in other respects are not superior. Neither of these teachers has the energy of Winckel, and neither possesses his earnestness and simplicity of method. Their clinics are, perhaps, more effective because they are more formal, and partake more of the character of clinical lectures. At the Frauen-klinik, where the following method of teaching is carried out more consistently than here, each student is assigned a case, and he is questioned before the class; the latter learn by a natural process; they have the same deficiencies as the man before them, and as he learns they learn with him.

In the clinic of May 7th Chrobak brought before the class a case of vertex presentation complicated by prolapse of the cord, hand, and foot. The child being dead, and the reposition of the prolapsed members impossible, perforation and extraction by the cranioclast were performed. To the students such an operation is of incalculable advantage, especially, as in this case, where the reasons for the operation and the different steps are explained, but to the operator it offers anything but the opportunity for brilliant effect. It is tedious, fatiguing, repulsive, and the student with a limited obstetrical training cannot appreciate the difficulties which embarrass the operator.

The obstetrical wards are under the joint direction of Chrobak and Braun, and the latter, at one of his clinics at the beginning of May, reviewed the work in his department during April. There were three hundred and twenty-one women delivered, with but one death, and in this case the parturient was admitted with fever. Among these cases all the obstetrical operations, excluding the artificial removal of the placenta, were performed. He reported fourteen laparotomies in April, with one death.

The Poliklinik has accepted plans for a new building, to be begun immediately. There are to be three pavilions: one in which the clinics are to be held, a second for a general infirmary, and a third, with fifty beds, for children. There is to be a hydropathic institute and a bath-house for day patients. The present accommodations are limited and inconvenient. The cost of the new klinik is to be half a million florins.

NEW ORLEANS.

To the Editor of THE MEDICAL NEWS,

SIR: It is probably generally known that the greater portion of New Orleans lies below the level of the Mississippi River, and that but a few feet below the street level the soil is quite moist. In consequence of this there are no sewers, excepting a few private ones that are emptied by a steam force-pump. The surface water runs through foul-smelling gutters into more foul-smelling canals, and thence toward Lake Pontchartrain, into which it is emptied by drainage machines. On its course through the gutters the water is contaminated in various ways, and yet it is a common spectacle to see people sprinkling the streets with this foul water.

For flushing purposes, the Auxiliary Sanitary Association has established pumps at various places to force river water directly into the gutters. For obvious reasons artesian wells would be advantageous, and the Association has in vain solicited the public to subscribe the $10,000 necessary to bore the wells. At this stage the Louisiana Lottery Company has tendered the money, and a canvass is being made of the members of the Association regarding the advisability of accepting the gift. The company has also offered the Association $20,000 to expend in the construction of public baths, a long-entertained desire that has seemed impossible of realization, though their usefulness from a hygienic standpoint is unquestioned.

In consequence of the character of the soil, the houses are without cellars, the buildings resting on the ground or elevated a few feet, and they are more or less damp. With houses favoring a lowered vitality—aside from the effects of the climate—and the facility for dissemination of the bacillus tuberculosis that the use of the gutter water to wet the streets affords, it is not surprising that a study of the mortality statistics for the past five years shows that fourteen per cent. of the total mortality among the whites is due to tuberculosis—a death-rate of three per thousand of population. Among the negroes the mortality from this disease is nineteen per cent. of the total mortality, or six per thousand of negro population. The prevalence of the disease among the white population is by some explained by the fact that it is the general custom to employ negress nurses for children.

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The absence of sewers, necessitating each house to have privies that are emptied by odorless apparatus, may have much to do with the low mortality from most of the germ diseases, though this immunity is greatly favored by the general employment of cisterns built above the ground, and the use of water from them or from the Mississippi River. Typhoid fever is an infrequent disease; and diphtheria was so until recently, but in the past three years there has been an increase in the annual number of cases—an increase that has been attributed to the influx during the winter months of northern visitors.

The recent enactment of the national quarantine law forbidding the admission of lepers into this country, and the discussion of the subject of leprosy at the conference of State boards of health at Nashville, bring this disease to mind. There is no evidence that leprosy is increasing in this State, and yet there is no law that would allow the isolation of the leper. In the century that the disease has existed in Louisiana no case of contagion is known, and to-day persons so afflicted are living with their families and not subjected to the additional affliction of separation from their friends. These people are liable to travel; and but a short time ago a case of leprosy was discovered in Jackson County, Mississippi, and isolated. He was originally a native of Louisiana. The mortality tables show one or two deaths a year from the disease, a fact that does not indicate an increase in the number of cases. Lepers throughout the State are induced to come to the Charity Hospital for treatment, and many remain there until death.

The Board of Health of Louisiana—and it is also the Board of Health of New Orleans—has just issued its biennial report for 1888 and 1889. It is well illustrated with drawings of the quarantine buildings and of disinfecting apparatus, and affords a clear idea of the means adopted to protect the State and the Mississippi Valley from the invasion of pestilence. The income from quarantine fees is over $50,000 per annum, and the Board has felt justified in making a reduction of about thirty per cent. in the fees for each class of vessels. It is a matter of surprise that the merchants of New Orleans, like those of New York, do not complain of this tax on their commerce, and urge the federal government to continue, without fees, a system that is as beneficial to the interior States as to those employing a quarantine system.

The City Council has just sent to the Legislature a protest against continuing the custom of confining the indigent insane in parish jails, and urges that the city be relieved of the expense of caring for this class, and that the State assume their maintenance in the asylum at Jackson, or elsewhere. As that institution is filled to its utmost capacity, and the State is hardly able to construct new asylums, there is but little hope of an improvement in this matter.

Referring to the charges against Passed Assistant Surgeon Armstrong, in charge of the Marine Hospital here, that were published in THE MEDICAL NEWS of the 7th, the Secretary of the Treasury finds that the 1st, 2d, and 4th (*b* and *c*) charges are sustained; the other charges are not sustained. Dr. Armstrong is to be superseded, to remain as assistant to his successor, and not to have command of a station for a year.

This is a surprise to Dr. Armstrong's friends, who had understood from the Surgeon-General that while Dr. Armstrong was a strict disciplinarian he was not in the wrong in the matter.

Dr. Armstrong feels that so great an injustice has been done him in the matter, that he will resign his commission.

S. T. ARMSTRONG.

CINCINNATI.

To the Editor of THE MEDICAL NEWS,

SIR: The people of Cincinnati realize, more than ever before, the importance of a properly conducted health department. It is not three months since the present Health Officer, Dr. J. W. Prendergast, received his appointment, but in that time he has so completely revolutionized matters under his control as to call forth the highest praise from the public and approval from the Academy of Medicine. The changes have been accomplished, for the most part, by personal activity in matters usually assigned to subordinate officers and assistants.

The first and most important movement was directed against improperly conducted dairies. Many dairies were found in a most appalling condition, and fully ninety per cent. were lacking in cleanliness. In some the cows stood up to the knees in filth. Many of them had not been liberated from their stalls for more than a year, and they were fed chiefly on distillery slop. An existing ordinance forbidding, under penalty, the having or offering for sale "milk from cows that have not been kept upon and had the use of good, wholesome pasturage at least twelve hours in every twenty-four during the months of May, June, July, August, and September of each year," had not been strictly enforced.

Examination of the milk from these dairies revealed, as might be expected, an even more alarming state of affairs. Milk from cows manifestly diseased and condemned, of which there were a considerable number, contained large quantities of blood, pus and filth. In his examinations the Health Officer obtained the assistance of the curators of the Cincinnati Hospital, headed by Dr. Leonard Freeman, Demonstrator of Bacteriology in the Medical College of Ohio, and the examinations were conducted in the laboratory of the hospital.

Eighteen specimens of milk were obtained from sixteen different cows in as many dairies. Five of the specimens contained tubercle bacilli in varying numbers. One sample from a slop-fed cow, which had not been out of her stall for several months, was apparently of ordinarily good quality, and even when examined with the microscope without the use of staining fluids, showed no impurities, but when properly prepared was found to be a veritable culture-soil for the bacillus tuberculosis. One cover-glass preparation contained several clusters of closely crowded bacilli, nearly all of which contained spores, and they were so numerous as to represent almost a pure culture of extraordinary size and thrift.

In the revelations which have been made there has been no attempt to reflect unfavorably on the official career of previous health officers, and no such reflection should be made. The fault lies not with those who have occupied the office, each of whom has been, so far as the writer is informed, a competent and reputable

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member of the medical profession; the fault lies with the city government. The growth of the Health Department has long since fallen behind the growth of the city, and the fact has not been sufficiently appreciated. At present the office is but third-rate in rank and salary. With nearly 350,000 inhabitants, Cincinnati should demand that her Health Officer devote his entire time and attention to the duties of the office, and the saving of life and health which would result would amply justify the expense.

The Academy of Medicine will adjourn June 30th until September 1st, for the usual summer vacation.

A microscopical society has recently been formed by a number of the younger members of the profession who are actively engaged in microscopic work. The society has at its head Dr. J. Eichberg, president, and Dr. A. C. Poole, secretary, and will be a branch of the Ohio State Microscopical Society.

The Cincinnati delegation to the American Medical Association was larger than that from any other city, numbering more than twenty.

NEWS ITEMS.

Fiske Fund Prize.—The Trustees of the Fiske Fund Prize of the Rhode Island Medical Society have awarded a prize of $300 to Dr. Edward Martin and Dr. H. A. Hare, of Philadelphia, for an essay on "The Treatment of Wounds and Obstruction of the Intestines," and a prize of $300 to Dr. Philip Coombs Knapp, of Boston, for an essay on "The Pathology, Diagnosis, and Treatment of Intercranial Growths." For 1891 a premium of $300 is offered, under the usual conditions, for the best essay on "The Etiology, Pathology, and Treatment of Diseases of the Hip-joint."

Pennsylvania State Medical Society.—The Pennsylvania State Medical Society held its fortieth annual session in Pittsburgh on June 11th, 12th, and 13th, and these officers were elected for the ensuing year: President, Dr. Alexander Craig, of Bucks; Vice-Presidents: Drs. F. H. Van Valzah, T. McKennan, W. S. Foster, and S. D. Bell, respectively of Mifflin, Washington, Allegheny, and Butler; Treasurer, Dr. George B. Dunmire, of Philadelphia; Permanent Secretaries: Drs. W. B. Atkinson and Charles W. Dulles, of Philadelphia; Recording Secretary, Dr. Israel Cleaver, of Berks. Reading, and the first Tuesday, June 7, 1891, were selected as the place and time for the next meeting. The committee in charge of the legislation for a State Board of Medical Examiners reported and read the names of those who had voted for and against the bill in the last Legislature. It was decided that the presidents of the State and county societies should constitute a legislative committee, "to secure the passage of a medical law that will give protection to the people of this State against incompetent practitioners of medicine." After much discussion, the following resolution was passed: "That it is the sense of this Society that the medical superintendents of our State insane asylums shall be restricted exclusively to the treatment of the insane inmates, and that one or more female physicians should be appointed, whose duty, under the control of the superintendent, shall be to have charge of the female insane patients, and we urge the Legislature to enact such laws as shall make these reforms obligatory." The meeting was a very successful one, over two hundred delegates being present.

Dr. Warburg, the inventor of the "tincture" of antimalarial renown, is said to have reached the age of eighty-six years, and to be in great pecuniary distress. An appeal on his behalf has been published in England.

A Revolt at the Bicetre Asylum.—On May 26th the great Parisian asylum for the insane witnessed the strange sight of a rebellion of its inmates. The rebellion was begun by a maniacal patient bursting the bars of his cell and then releasing forty others. They attacked and drove back their guards, and then proceeded to ransack the quarters of the keepers, after which they kept up the fight quite fiercely until the guards got access to the water-hose and turned it on them; this frightened and cowed the rebels so that they retreated and were one by one returned to their cells.

Dr. Oliver Wendell Holmes has given us a characteristic sentiment in favor of an International Copyright code. He says that literary men are "the soft-handed sons of toil," and further remarks that he cannot see "that a callus on the palm confers any better claim to fair treatment than a furrow in the forehead, and an aching in the brain."

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 10 TO JUNE 17, 1890.

By direction of the Acting Secretary of War, GEORGE M. STERNBERG, *Major and Surgeon*, will, in addition to his present duties, perform the duties of the Post Surgeon at Fort McHenry, Maryland, during the absence of that officer on leave.

By direction of the Acting Secretary of War, JOHN DE B. W. GARDINER, *Captain and Assistant Surgeon*, having been found incapacitated for active service by an Army Retiring Board, will proceed to his home.—Par. 21, *S. O. 135, A. G. O., Washington*, June 10, 1890.

CRAMPTON, L. W., *Captain and Assistant Surgeon.*—Is granted leave of absence for one month, to take effect the 15th instant.—Par. 5, *S. O. 75, Department of the Missouri, St. Louis, Mo.*, June 9, 1890.

APPEL, AARON H., *Captain and Assistant Surgeon* (Fort D. A. Russell, Wyoming).—Is granted leave of absence for one month, to take effect on or about June 15, 1890, with permission to apply, through Headquarters Division of the Missouri, for an extension of one month.—Par. 4, *S. O. 42, Headquarters Department of the Platte, Omaha, Neb.*, June 10, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING JUNE 14, 1890.

SIMONS, MANLY H., *Surgeon.*—Ordered to the U. S. S. "Enterprise."

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVI. SATURDAY, JUNE 28, 1890. No. 26.

ORIGINAL LECTURES.

ENUCLEATION OF GOITRE.

A Clinical Lecture
delivered at the Jefferson Medical College Hospital,
March 22, 1890.

BY W. W. KEEN, M.D.,
PROFESSOR OF SURGERY.

GENTLEMEN: I shall show you to-day a case of goitre in a woman with the following history: She is thirty years of age, an American by birth. Six years ago she noticed that breathing after exertion became difficult, and three months later she discovered a slight swelling in the neck. This swelling has increased in size only gradually, except for two or three months after each of her two labors, when the increase was quite rapid. This statement is in consonance with the fact that in many women there is increased fulness of the thyroid gland after maternity. The tumor is not painful. The urine is straw-colored and contains a doubtful trace of sugar, some pavement epithelium, but no albumin.

The following measurements have been taken: Circumference of the neck 16¼ inches. The horizontal arc of the tumor, from side to side, is 7¾ inches, subtending a chord of 4¼ inches. The horizontal arc from the middle line to the right border is 4½ inches; from the middle line to the left border 3¼ inches. The vertical arc is 6 inches; its chord 3¼ inches. The tumor feels distinctly cystic and resilient, but it is not markedly lobulated. The larynx has been examined by Dr. Jones and the vocal cords found to be normal, and there is no paralysis. I should add that it is through the courtesy of Dr. Hearn that I have the opportunity of showing you this patient.

There are three kinds of goitre: First, we have exophthalmic goitre, which heretofore has been a non-surgical affection, and is accompanied with enlargement of the heart, rapid pulse and protuberance of the eyeballs. This form has been successfully operated on recently, but the number of cases is too small to generalize from. Second, we have parenchymatous goitre, in which the gland tissue proper of the organ is involved. This makes a hard dense fibrous structure. Third, we have the form which I think is present in this case—a cystic goitre, which is really a fibro-adenoma with one or more cysts. In addition to these goitres, properly so called, we have the various cancerous enlargements of the gland, which are necessarily more serious than those which I have mentioned.

The diagnosis of goitre is usually easily made, but the variety is not always so readily determined before operation.

The medical treatment of goitre is unsatisfactory. Sorbefacient and irritant ointments and internal remedies have given practically but little result. In the surgical treatment of this affection several methods have been employed. The first method that I shall allude to is that of injection, either of the ordinary tincture of iodine, or as proposed by Sir Morell Mackenzie, of the tincture of the chloride of iron, the object being to convert the enlargement into an abscess. I do not believe in either of these methods, especially since the splendid results of operations which have been reported by Socin and others. In the light of these reports, I think that it is useless to talk of the injection of any fluid into these tumors. It is a procedure attended with danger of septic infection, and is painful, tedious, and uncertain in its results.

Of operative procedures proper, there are three. The first is evacuation. In some cases, especially of large immovable masses, this will do a great deal of good. It consists in opening the various loculi, whether cystic or solid, and peeling out their contents. The second method, and the one which I shall try in this case, is enucleation. It consists in cutting down to the cyst itself and enucleating it as we would any other cystic growth. This method has been advocated especially by Socin, of Switzerland, and his cases have been reported by Keser, his assistant. The third method is extirpation, which is the most dangerous of all, both as concerns its immediate and subsequent results. In 1871 Dr. Green, of Portland, Maine, reported six cases of this kind, and it surprised the surgical world that he was able to report so many. Since that time, and more especially in the last few years, a revolution has taken place in the surgery of the thyroid gland. Billroth has reported a large number of cases in which he has had remarkable results. It has remained for Kocher, of Switzerland, to give the most extraordinary figures. In a paper published in the *Correspondenzblatt für Schweizer Aerzte*, January, 1889, he reports 250 cases of extirpation. His results are astonishing. Of the 250 cases 25 were cases of cancer. Of this number 4 died, a mortality of 17 per cent. Of the remaining 225 non-cancerous cases, 223 recovered and only 2 died, a mortality of only 0.8 per cent. Socin in 59 cases of evacuation and enucleation had only one death. This occurred a short time after operation and was due to hæmorrhage. You can imagine how great the hæmorrhage was, when I tell you that during the operation 170 ligatures were employed. Years ago I saw a case of goitre operated on in this city in which the hæmorrhage was enormous, and the patient died three days afterward.

I have here some drawings from Kocher's paper published in Langenbeck's *Archiv* for 1880. The incision which he recommends in extirpation is an angular one, vertical in the median line and then extending outward over the larger portion of the growth. If necessary, this can be converted into a Y-shaped incision by an oblique cut on the opposite side. In operating it is the veins which give by far the greatest trouble. In this first in-

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cision the external jugular will probably not be interfered with, but the anterior jugular, another vein called by Kocher the oblique jugular, and the anterior communicating branch will be cut. These are to be tied with double ligatures and the vein divided between them. We next come to the deeper vessels. We have a superior communicating vein going from the superior thyroid vein of one side to that of the other. There is also a deep anterior communication connecting the deep thyroid veins of each side. There is not only a superior thyroid, but also an accessory superior thyroid. In the same way there is an inferior thyroid and an accessory inferior thyroid. Then we have, what is very common, a still lower thyroid vein, the vena thyroidea ima, with an accessory vein to it. These veins are to be divided methodically. The order in which the three superficial veins are tied makes little difference. The fourth vessel to be tied is the superior thyroid; fifth, the accessory superior thyroid; sixth, the superior communicating; seventh, the thyroidea ima; eighth, its accessory; ninth, the inferior thyroid; tenth, its accessory; and eleventh, the inferior communicating.

But there are also arteries as well as veins which require attention. It is principally at the inferior thyroid that trouble is apt to be met with. This is because of its relation with the recurrent laryngeal nerve. The inferior thyroid, as you know, arises from the thyroid axis, goes behind the carotid and the sympathetic nerve, having in front of it the superior ganglion of the sympathetic, from which goes the cardiac nerve. The artery then goes behind the recurrent laryngeal nerve and passing under the tumor toward the middle line, finally plunges into the gland. In tying this artery there is danger of wounding the sympathetic or the recurrent laryngeal nerves. If the latter is destroyed it produces paralysis of the vocal cord of that side, but does not necessitate tracheotomy. If both are injured it becomes necessary to do tracheotomy, as the glottis closes.

The only way to avoid this injury to the nerve is *to isolate absolutely* the vessel before it is tied. In goitre this artery not seldom becomes as large as the carotid.

Another difficulty is that the recurrent laryngeal nerve is very tightly adherent to the gland on its posterior surface in the groove between the œsophagus and trachea. If the gland is drawn over to one side, the nerve may be pulled into a loop and injured, causing paralysis of the vocal cord. It is important to keep close to the tumor at this point.

I have here some statistics taken from Keser's paper, published in 1887. The number of cases operated on was 59. Of these, 5 underwent total extirpation, 17 partial extirpation and 37 enucleation. It was found that in 9 of the partial extirpations, enucleation could have been performed. The ages of the 59 patients varied between twelve and seventy years. There was only one death. In 11 partial extirpations, the histories of which were followed, there was return in 5. In 21 enucleations there was return in only 3.

The dangers of extirpation are immediate (as from hæmorrhage) and remote. The remote dangers are important. These dangers have been explained by the experiments of Horsley. In cases of atrophy or destruction of the thyroid gland its function is, of course, abolished. The function of this gland seems to be a two-fold one. It presides in some obscure way over the nutrition of the mucous tissues of the body, and in the second place it largely controls the genesis of the blood. The complete extirpation of the gland is liable to be followed by great anæmia and a condition which is called myxœdema or cachexia strumipriva. In this curious condition the body becomes bloated, the eyelids hang in folds, the face is like that of a person dropsical from Bright's disease, but the exudation is not soft but hard, and results from the development of mucous tissue. After a time, the hair drops out and mental changes occur, finally resulting in crétinism. This is often seen in Switzerland in connection with goitre. In these cases the speech is slow and faulty, mental operations become sluggish, albumin appears in the urine, and finally death closes the scene. Another curious occasional result is that peculiar muscular tremor known as tetany. Myxœdema and tetany are not apt to occur in those cases in which a portion of the gland is allowed to remain. This fact has led to enucleation of the goitre in preference to extirpation of the whole gland, and lately to the recommendation by some that a part of the gland should be transplanted. This has been suggested by Schiff and Kocher, and has recently received the approval of Horsley. The operation consists in taking a part of the normal thyroid gland of some animal, as a sheep, and transplanting it into some part of the body before operation, as, for instance, into the abdominal cavity. The results of these operations have not yet been published, but, as I have stated, they have received the approval of so able a surgeon and experimenter as Horsley, which is a great point in their favor.

In this case I propose, if possible, to do enucleation and not extirpation. In enucleation we avoid two of the dangers of extirpation, the immediate danger of injury to the recurrent laryngeal nerve and the remote danger of myxœdema or tetany. Here a large portion of the left lobe appears to be in good condition, and I shall try to preserve it.

In some cases it is necessary to do tracheotomy, but always avoid it if possible, for the moment you open the trachea you have a septic wound, as all the air entering and passing from the lungs passes over the wound.

You observe the peculiar breathing which the patient shows, and also the fact that she does not take ether well. I first make my incision through the skin and ligate all the veins that appear. The layer of gland tissue which overlies the cyst in these cases may be very thin or it may be as thick as one-half or three-fourths of an inch. I shall cut through this tissue until I reach the cyst. I now come to what I think is the cyst wall. I ligate the veins that appear on its surface, tying every vessel that would be apt to bleed. I now find, however, that it is not the cyst wall, but glandular tissue, almost one-fourth of an inch of which I must cut through before I reach the cyst. On opening this, a quantity of dark-colored fluid is discharged. It is easily seen by those who are near that the cyst-wall can be readily distinguished from the gland tissue. The cyst, as you see, is separated and removed without difficulty, with but little bleeding. There is quite free hæmorrhage from one rather large vessel at the bottom of the cavity, but this is now controlled after some little trouble. I shall not close the wound until satisfied that every bleeding vessel

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is tied. The number of ligatures used by Socin varied between twenty-four and sixty. In this case I have used thirty-seven. I have not at all interfered with the left lobe of the gland, which, however, is only slightly enlarged. As there is no further bleeding I apply deep catgut sutures to bring together first the cyst wall, then the muscles, and lastly the skin, by superficial sutures of silk, inserting a rubber drainage-tube and also a bundle of horsehair. The wound is then dressed in the ordinary manner.

NOTE.—The patient had had a troublesome cough for some days before the operation. This was very markedly increased immediately after the operation. She was also uncontrollably restless, and so displaced the dressing that the wound was exposed and became infected within twenty-four hours; moderate suppuration and considerable fever followed, the temperature rising to 104.2°. For six days she was seriously ill. The sutures in the vertical incision were removed, the wound washed out with bichloride solution and ample drainage secured. Alcohol was freely given. She then began to improve; in ten days the temperature became normal, and she left the hospital, after three weeks, entirely recovered.

ORIGINAL ARTICLES.

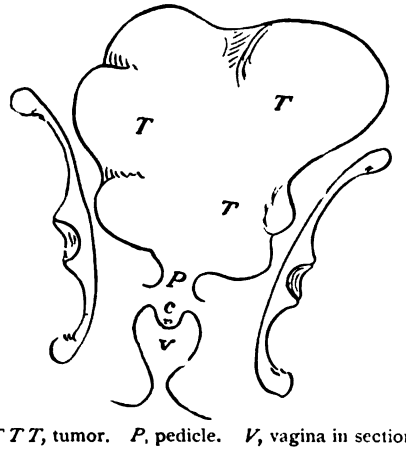
SUPRA-VAGINAL HYSTERECTOMY.

Hysteromyomectomy with Suspension of the Stump in the Lower Angle of the Abdominal Incision.

BY HOWARD A. KELLY, M.D.,
GYNECOLOGIST TO THE JOHNS HOPKINS HOSPITAL, BALTIMORE.

THE method here proposed[1] is limited to cases conceded to be most favorable for operation—those in which there naturally exists a pedicle, or in which it is possible to form a pedicle below the tumor masses. I do not wish to consider atypical cases, in which total ablation of the uterus (panhysterectomy) is called for, or those in which the uterus

FIG. 1.

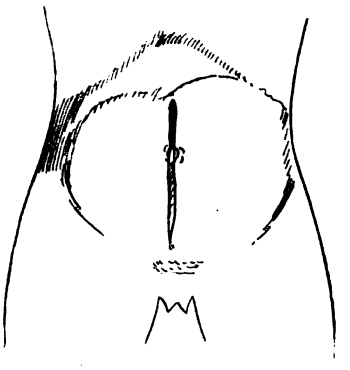


T T T, tumor. *P*, pedicle. *V*, vagina in section.

from fundus to cervix is a mass of fibroid tumors. I also purposely avoid the important question as to the best method of forming a pedicle when the broad ligament is choked with fibroid tumors. Fig. 1 is a generic representation of the class under discussion.

I have adopted in these cases an original method combining the advantages and eliminating many of the dangers of Hegar's and Schröder's methods—the ordinary extra- and intra-peritoneal methods.

FIG. 2.



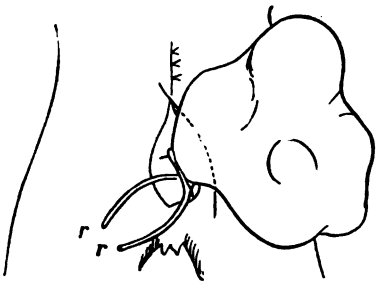
The operation consists of seven steps, as follows:

First. A long incision in the linea alba (Fig. 2) for the delivery of the myomatous uterus.

Second. The elevation of the tumor until the pedicle is brought into view for treatment by tying the broad ligament structures, or for enucleation of tumors from the broad ligament until a pedicle is formed, when the rubber ligature is applied and tied tightly, controlling the circulation. (Fig. 3.)

Third. The tumor is cut away from one to two inches above the rubber ligature (Fig. 4), by first

FIG. 3.



Tumor delivered. *r r*, rubber ligature in place and ready to be drawn tight. Dotted line shows the incision through the peritoneum.

splitting the peritoneum and then cupping out the upper face of the stump, cutting with each stroke down toward the vaginal canal.

The cervical canal must next be carefully dissected out and its site well cauterized.

Fourth. This consists in the closure of the raw face of the stump by uniting the opposite sides by means of a continuous buried suture of catgut as seen in Figs. 5 and 6. Fig. 5 represents the appearance

[1] See American Journal of Obstetrics, April, 1889.

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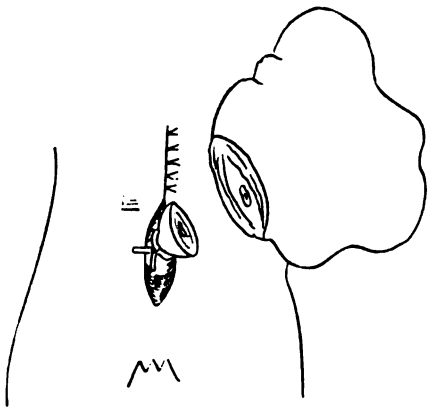
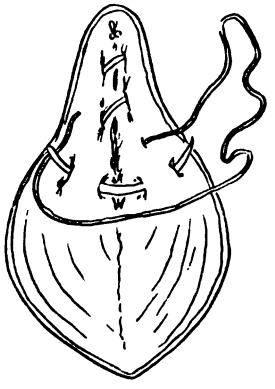
seen upon looking down on the stump from above, Fig. 6 being a vertical section through the cervix.

FIG. 4.



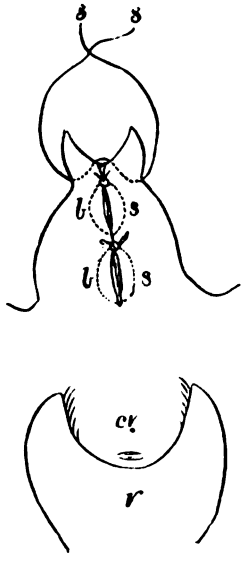
Tumor separated from pedicle.

FIG. 5.



Method of closing upper raw surface of stump by means of a continuous buried suture.

FIG. 6.

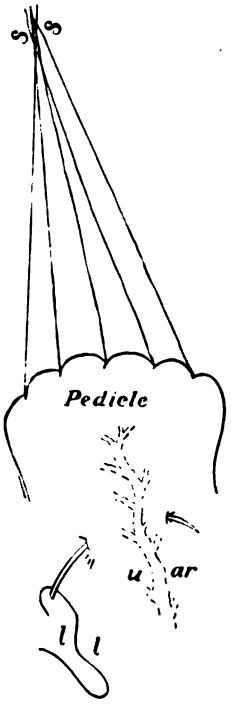


Stump united up to last row of interrupted surface-sutures, *S S*. *b s*, last rows of buried sutures. *V*, vagina. *c v*, vaginal cervix.

The last row of sutures, which brings the peritoneal surfaces into apposition, is of interrupted silk sutures, with the long ends left uncut, for a purpose to be described later. All of these sutures, buried and superficial, must be applied with the view of controlling the circulation as well as securing approximation. They must, therefore, be drawn tight, and must encircle any vessels in view.

Fifth. After the surface of the stump has thus been closed and there remains nothing of the wound but the linear union of the peritoneal surfaces, the rubber ligature is cut away, and the lips of the wound are carefully observed. If there is any persistent oozing the nearest uterine artery must be ligated. This is accomplished by grasping the long ligatures and pulling the stump to the right or left, exposing the site of the left or right artery. A stout needle armed with a catgut ligature is then swept boldly through the side of the stump, well below the sutured area (Fig. 7) and tied, thus cut-

FIG. 7.



Ligation of left uterine artery. Pedicle is pulled toward the right by means of the long interrupted silk sutures *S S*, while the needle carrying ligature is passed under the uterine artery.

ting off all communication between the artery and the stump.

Both arteries may be treated in this way without any danger of destroying the vitality of the stump. If, however, there should be no flow of blood from the closed lips of the stump, the fifth step may be omitted.

Sixth. The abdominal incision is closed down to

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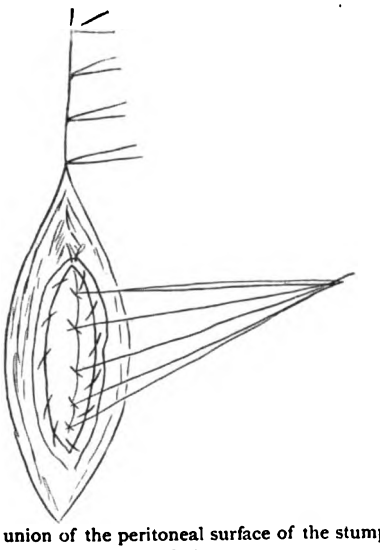
the stump, putting in a drainage-tube, if needed, well above the stump. Following this the parietal peritoneum of the abdominal incision is united to the peritoneal coat of the stump, below the lips of the stump, by means of a continuous catgut or silk ligature (Fig. 8); and in this way the stump is separated from the peritoneal cavity.

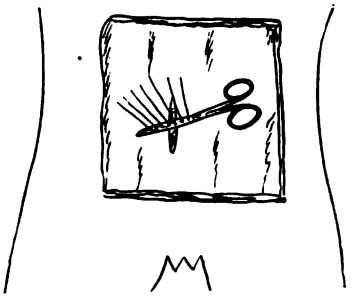
FIG. 8.



Showing union of the peritoneal surface of the stump to the parietal peritoneum.

Seventh. The wound is dressed with some dry antiseptic powder, or simply packed under the edges of the skin, around the suspended stump, with antiseptic gauze. Finally, a large square of gauze, six or eight folds in thickness, with a small slit in it, is prepared, and the long ligatures which unite the peritoneal lips of the stump are pulled through the slit. These are lifted well up, and grasped by a pair of long Keith's forceps laid horizontally on the body (Fig. 9).

FIG. 9.



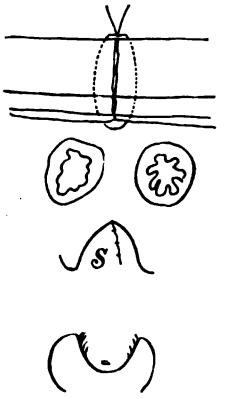
Dressing applied. Interrupted sutures of the surface of stump are brought through a hole in the gauze and grasped by forceps.

This dressing serves effectually to keep the stump from pulling back into the abdomen, and the operator has at all times full control of it at a moment's notice in case of accident. This gauze can be changed as often as soiled. Once every two or three days is usually sufficient. The silk sutures uniting the peritoneal lips of the wound finally either come away or are cut loose and pulled out in about ten days.

The small pit which is thus left in the lower angle of the abdominal wound over the stump rapidly fills by granulation.

This method has distinct advantages over internal or external methods commonly in use. It is better than dropping the stump back among the intestines (Fig. 10). By the new method hæmorrhage is not

FIG. 10.

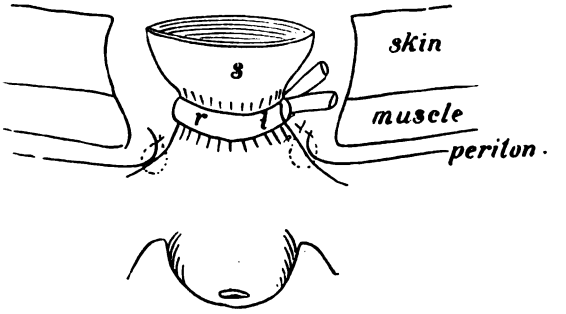


Intra-peritoneal treatment. Stump *S* dropped back into peritoneal cavity and abdominal walls closed above.

dangerous, being at all times under control. The danger of sepsis is also removed, a danger to which large numbers of cases have succumbed after the intra-peritoneal treatment of the stump.

It is better than the common external method (Fig. 11), because, in the first place, it is there

FIG. 11.



Extra-peritoneal treatment of stump *S*, which sloughs off at the rubber ligature *r l*. The union of the peritoneum of the stump to that of the abdominal walls is shown by the dotted circles.

necessary to elevate even a short pedicle far enough to attach the parietal peritoneum *below the rubber ligature*. By my method the attachment is higher, and the method is, therefore, better for short pedicles, doing away with a traction which is often excessive.

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Again, when the rubber ligature is left on, it is impossible to limit the depth of the slough which takes place as the distal end drops off, and it will readily be granted on general principles that a method which constricts any part of the body, and waits for it to drop off by sloughing is a coarse and unscientific means of performing an amputation.

THE PROPRIETY OF THE REMOVAL OF THE APPENDIX VERMIFORMIS DURING THE INTERVALS OF RECURRENT ATTACKS OF APPENDICITIS.[1]

BY FREDERIC S. DENNIS, M.D.,
VISITING SURGEON TO BELLEVUE AND TO ST. VINCENT'S HOSPITALS, NEW YORK.

THE question propounded in the title of this paper is a new one in surgery. Its solution cannot be made at once. The entire subject must first be considered in the light of aseptic surgery, and, having discussed the question from that point of view, the operation must be examined into as to its propriety in certain cases. A definite answer must be postponed until new data and recent clinical experience have afforded us more reliable information from which to judge the expediency of such an important surgical procedure. The propriety of excision of the appendix can be discussed, however, from a theoretical point of view, and reference can also be made to the few reported cases, and from such data some knowledge can be obtained which will at least throw light upon this hitherto unexplored field of operative surgery. The entire subject of iliac inflammations is fraught with great interest from many points of view. However attractive these inflammations may appear, the discussion in this paper is restricted to one single question in regard to the whole subject, and that is, Is the surgeon justified in excising the appendix after recovery from one or many attacks? The question of removal of the appendix during an interval of quiescence cannot be answered dogmatically. I shall endeavor to demonstrate that the operation as routine treatment in all recurrent cases is unsurgical, and that only in rare cases is it indicated.

With the view to simplifying the subject it seems pertinent to classify these inflammatory attacks; because all inflammations in this region are not identical, either in etiology, in the anatomical part involved, or in the termination.

The opinion has recently been advanced that all of these conditions are dependent upon a primary pathological change in the appendix, and that all the subsequent changes are secondary to an affection of the appendix. For my own part I cannot endorse this view. I have observed many cases that certainly ran a course very similar to typical appendicitis, and yet the cæcum or the pericæcal region were the parts involved, and the appendix was normal. I shall have occasion to refer again to these cases. If the view is accepted that all these changes are secondary to a primary appendicitis, then certainly it must be admitted that this one region forms an exception to the laws governing inflammations in other parts. This belief would imply that there is a part or section of the alimentary canal that enjoys an immunity from primary inflammatory changes, and that there is a limited area of connective tissue in the right iliac region which is free from initial inflammations, and that there is a restricted zone of peritoneum exempt from a peritonitis except as secondary to an appendicitis. Surely this view is not tenable, and clinical experience clearly points to the conclusion that there is no exception here to the laws governing inflammations in general; but that each part, and every structure, and all varieties of tissue may become the seat of an inflammation independent of an appendicitis. To refer now to a classification of these inflammations. They may, for convenience, be divided into—

1. Typhlitis.
1. Perityphlitis.
3. Appendicitis.
4. Peri-appendicitis.

These different inflammations may merge into one another if no surgical treatment intervenes; but the separate conditions may exist independently, and each may run its course without necessarily involving the other. By a typhlitis is meant an acute or subacute inflammation of one of the several coats of the cæcum. This form may possibly extend to the adjacent tissues. The lesion consists of a catarrhal or ulcerative inflammation, and begins in the mucous membrane. This variety of inflammation is dependent upon fæcal impaction, a septic diarrhœa, a corrosive poison, or an ulcerative process.

There are some surgeons who deny the existence of a localized inflammation of the cæcum. I am confident that I have seen several cases of this kind. The proof of this statement becomes apparent by an examination of two specimens which I have, showing well-marked ulceration of the mucous membrane of the cæcum, and these changes are entirely independent of any trouble with the appendix. Dr. Janeway informs me that he has recently seen three cases of localized cæcal inflammation. These cases certainly establish the clinical fact which is denied by some surgeons, that a local inflammation in the right iliac region can exist independent of appendicitis.

The case reported by Mr. Pepper, of London, is another proof of local cæcal inflammation. The vaginal injection of a 1 : 2000 bichloride of mer-

[1] Read before the American Surgical Association, May 14, 1890.

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cury solution caused extensive ulceration of the cæcum. The patient died, and the autopsy revealed the fact that the ulceration was limited to the cæcum.

Toxic enteritis may chiefly, if not entirely, involve the cæcum, and after the administration of antimony as well as of arsenic this phenomenon has followed. I have cured a case of extensive ulceration, of eleven years' standing, of the cæcum and ascending colon, by copious injection high into the colon, using as strong a solution of bichloride as the circumstances permitted. After eleven years of septic diarrhœa and hæmorrhage this patient was entirely cured of his cæcal and colon ulceration.

The second variety, viz., perityphlitis, is that form of inflammation which involves the areolar tissue in the vicinity of the cæcum. This leads to suppuration and may exist independent of any change in the appendix. These cases are observed following traumatism, as in sprains of the psoas muscle, or from some pathological condition in the ilium, sacrum, or vertebræ. I have seen these cases occur after violent athletic exercise; one case occurred after swimming, a second after jumping, and a third after lifting heavy weights. These abscesses go on to free suppuration, are situated in a kind of tissue prone to break down after an injury, are not subject to perforation, but generally point toward the periphery of the body.

The third variety, appendicitis, means an inflammation of the vermiform appendix, and is identical with a typical typhlitis, only that it is more serious in its consequences, owing to the anatomical formation of the part; but the causes which give origin to the change are, in many respects, similar.

The fourth variety, viz., peri-appendicitis, is not so clearly defined as is perityphlitis, because this variety is undoubtedly secondary to an appendicitis. The small amount of areolar tissue about the tip of the appendix is not exposed to the same injuries as the more abundant quantity about the cæcum.

The question of removing the appendix during the quiescent period would therefore involve the last two conditions, viz., an appendicitis or a peri-appendicitis.

It is, then, with an appendicitis or a peri-appendicitis that this question of removal of the organ during an interval of attack concerns us at the present time.

In discussing the operation the first question that naturally arises is, What proportion of cases of appendicitis are recurrent? It is with this percentage of cases that the question of removal of the appendix arises. There are no definite statistics upon this most important point. Fitz, in his scholarly article, has found in the examination of 257 cases of appendicitis that 28 of the cases were recurrent. This would place the number at about 11 per cent. In other words, 89 per cent. of the cases of appendicitis are solitary and 11 per cent. are multiple. The proportion is about the same in regard to typhlitis and perityphlitis as regards solitary and multiple attacks.

A second question now arises, viz., In the 11 per cent. of cases in which a relapse occurs, what is the termination? If all the 11 per cent. of cases of relapsing appendicitis terminated fatally then the question of excision of the appendix is easy to answer. It is obvious that if all these patients died during one of the recurrent attacks excision of the appendix should be attempted after the first or second attack; because the removal of the appendix would be the only salvation open to these unfortunate individuals. Happily death is not the only termination for this 11 per cent. of cases.

They may terminate in:

1. Resolution.
2. Formation of pus and evacuation of abscess.
3. Perforation and general peritonitis.

It is not known how many of these cases of relapsing appendicitis terminate in resolution. Unfortunately there are no statistics upon this point.

Nearly all of the authorities, however, are in accord with the general statement that a majority of the cases undergo resolution, and that only exceptionally perforation occurs.

The second way in which an appendicitis may terminate is by the formation of pus and the evacuation of the abscess, either spontaneously or by surgical interference. In regard to the chances of recovery offered by an early operation, it has been shown that there are fifty per cent. more recoveries following operations before the eighth day of the disease than after the eighth day, and that the mortality is only eight and one-half per cent. in those cases operated upon before the eighth day. If now the operation of incision is performed during the second or third day of the disease in these relapsing cases, the rate of mortality is lessened to such a degree (as shown by a study of Weir's, Bull's, and McBurney's cases) that the mortality is comparatively insignificant.

If now out of the eleven per cent. of cases of relapsing appendicitis there are deducted first those cases which terminate by resolution, and second, those cases which recover by early incision, it is obvious that only a small part of the eleven per cent. of cases are exposed to the remaining source of danger, viz., perforation and general peritonitis.

The whole question of removal of the appendix, therefore, practically has reference only to those cases in which a general peritonitis, the result of a perforation, is likely to arise. It is under these circumstances that death follows, and the excision of the appendix is the only measure that will remove

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this cause of almost certain death. The line of argument thus pursued brings us face to face with the clinical fact that removal of the appendix is to be considered only as a means to protect a patient in the future from death by a peritonitis the result of a perforation. If it can now be shown that in the extreme emergency of a general peritonitis a laparotomy can save a patient, then the removal of the appendix during a quiescent period is deprived in a great measure of the only argument that can be claimed for its performance. Simple reference to the cases of Krönlein, Morton, Weir, Sands, McBurney, and others demonstrates that perforation does not necessarily preclude all possibility of recovery, which is the great argument in defence of removal of the appendix during the period of quiescence. The same line of argument may be carried even further, and it can be shown that perforation may occur and no laparotomy be performed, with still a possible chance for recovery. A proof of this statement may be found by a reference to the following cases.

Dr. Markoe reports the case of a child who had symptoms of general peritonitis upon the second day of an attack. A month later this child died from some other disease and the autopsy showed that perforation of the appendix had occurred, and that adhesions of the intestine had taken place. Dr. Biggs made an autopsy and found the evidences of a previous perforation of the appendix from sloughing. The appendix was found encysted in an old circumscribed peritoneal abscess.

A case is mentioned by Shaw where an abscess was formed in the scrotum from a perforated hernial appendix, and Thurman records a similar case.

Dr. Cabot reports a case where an inch of a previously perforated appendix was found in an abscess in the groin some eighteen months after an attack of appendicitis.

Ballou and Pooley each report a case where the appendix had sloughed and the patients recovered. Many other cases might be cited to show that even if perforation of the appendix has occurred it is not necessarily a fatal lesion.

Dr. Janeway made an autopsy on a patient who died some time after an attack of appendicitis. The appendix had been the seat of ulceration and perforation; but it had formed adhesions by inflammation to the surrounding tissues and no gas had escaped into the general peritoneal cavity, and as far as the perforation was concerned, the patient lived. It is an illustration of the clinical fact that a circumscribed peritonitis may shut off the appendix from the general peritoneal cavity and that even perforation may occur and not be a fatal lesion.

The best of all proofs that perforation of the appendix may occur and the patient survive such an attack, is found in a case in which an autopsy was made ten years after an attack of appendicitis. It was ascertained that the appendix had been perforated during the attack and that it had been accompanied with abscess and suppuration. Dr. Biggs, who made the autopsy, found that the tip of the appendix had sloughed from its base, to which it was still held by an impervious cord. The entire mass, including the base and apex, with the filiform connection between the two separated parts, was embedded in a mass of inflammatory new-formation tissue, which was adherent to the kidney and to the liver. This patient for ten years had no trouble with his appendix, and no one ever suspected the nature of his previous attack of illness.

If now I have made the thread of my argument clear, it is obvious that excision of the appendix has to do with only about 11 per cent. of the cases of appendicitis, for 89 per cent. of the cases are not relapsing, and therefore do not belong to the class of cases in which removal is indicated. Of the 11 per cent. a majority recover; because perforation is the exception rather than the rule. Some undergo suppuration and heal. Of the few cases exposed to the danger of perforation and general peritonitis some recover, as is shown by a reference to the cases just mentioned.

It is now pertinent to consider in detail the real arguments against removing the appendix during a quiescent period in the few cases where the attacks have been recurrent. The arguments which I would respectfully submit against this operation of excision during a quiescent period in relapsing cases are as follows:

1. The danger to human life.
2. The difficulties of a positive diagnosis.
3. The development of ventral hernia.
4. The lack of conclusive evidence that excision of the appendix is attended with permanent relief.
5. The result of relapsing attacks may afford an immunity from danger in the future.

1. *The danger to human life* is an argument which confronts the conscientious surgeon. Opening the abdomen for the purpose of finding the appendix vermiformis is certainly attended with risk to life. That risk increases in accordance with the amount of pathological change that has taken place. I must dissent from the view held by Morton, who speaks of this procedure as a "comparatively trivial operation at a time and under conditions when prompt and permanent relief and recovery can almost invariably be secured." The same opinion is also expressed by Senn, who writes: "Excision of the appendix in cases of simple uncomplicated appendicitis is one of the easiest and safest of all intra-abdominal operations." Such statements are misleading. In May, 1887, I excised the appendix, on

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account of a stab-wound, with no difficulty as regards finding it; but to remove it and to invert the edges and to introduce sutures and to close hermetically the opening into the cæcum is a delicate operation which requires nicety of *technique*. It is by no means to be considered a trivial procedure, and upon the result of the operative work of the surgeon depends the life of the patient. The giving way of a stitch or the sloughing of a small shred exposes the patient to imminent peril. One bubble of intestinal gas is sufficient to infect the whole peritoneum, and such a catastrophe will in all probability lead to a fatal termination. The possibilities of hæmorrhage, of purulent œdema, of septic peritonitis, of suppression of urine, and of surgical shock must not be overlooked. These are the dangers to which a patient is subjected in the ordinary cases; but when, from recurrent attacks, adhesions have formed, the connective tissue has undergone pathological changes, the cæcum has become dilated, and the anatomical relations are disturbed, excision of the appendix becomes a serious operation. Surgeons have attempted to find an analogy between removal of the appendix and of the ovary. This comparison causes a tendency to attach too little importance to the excision of the appendix. It must be borne in mind that the vermiform is an integral part of the alimentary canal; it often is adherent to the large and important bloodvessels, it may be buried under the cæcum, it may be firmly imbedded in inflammatory exudation, the tearing of which may result in a rent in the intestine or ureter, and the sewing up of which requires time and skill. Not so with the ovary, for here the oozing is easily controlled, and if a pus cavity is found the cavity can be easily washed out and rendered aseptic. For these reasons the excision of the appendix cannot be looked upon in any light other than that of an operation attended with considerable risk to human life.

The operation of removal of the appendix during an interval between the attacks has been attended with a death-rate the precise percentage of which cannot be at present ascertained, because a report of all the cases has not yet appeared in print. It is safe to state, however, that the death-rate is higher than that of early incision on the second or third day of an attack. This one argument alone deprives the operation of its greatest advantage. Thus far, in dealing with this subject the ability to find and to remove the appendix has been assumed; but a most serious aspect of this question is the failure to find the appendix after the abdomen has been opened, or, owing to extensive adhesions, an inability to remove the organ. Recently I was present at an operation for the purpose of excision of the appendix. The laparotomy was performed upon the patient during the quiescent stage, and although the surgeon was one of the most skilful operators and one of the best anatomists, he was unable to find the appendix after a long and tedious search. The abandonment of this operation was wise and prudent, and I mention this clinical fact to impress the point that the operation is, of necessity, attended with great danger where a prolonged search must be made with the peritoneal cavity opened and the intestine exposed. When an operation becomes necessary it should be performed early during an attack, and at the same time removing, if necessary, the appendix. It is the proper line of treatment. It is quite another thing after an attack has passed and in the quiescent stage to attempt an excision. In the former case it is indicated to save life, in the latter case it is fraught with great danger to avoid a possible future attack, from which the patient may even easily recover.

2. *The difficulties of a positive diagnosis.*—No surgeon who has seen many cases of abdominal surgery can overlook the fact that the diagnosis is often fraught with the greatest difficulties and with much uncertainty. The more cases examined the more real becomes this fact. It is often impossible to arrive at a positive and clear diagnosis as to the real condition that has given rise to the attacks. The most skilled diagnosticians and the most experienced surgeons have made errors in diagnosis as regards lesions in this region. It is only necessary to review the list of diseases that already have been mistaken for appendicitis in order to estimate the weight of this argument against excision of the appendix during a quiescent period.

Among the conditions that have been mistaken for appendicitis may be mentioned the following: General or circumscribed peritonitis, pelvic peritonitis, renal, biliary, and intestinal colic, ovarian and lumbo-abdominal neuralgia, intestinal obstruction, floating kidney, pyelitis, cæcitis, internal strangulation, psoas abscess, pelvic cellulitis, rupture of the serratus magnus muscle, suppurative adenitis, typhoid, tubercular and stercoral ulcers, caries of ilium and of vertebræ, morbus coxarius, suppuration in the retro-peritoneal and mesenteric glands, traumatic rupture of intestine and right ureter, rupture of the bladder and of the gall-bladder, rupture of an aneurism in the broad ligament, sprain of the iliacus and psoas muscles, salpingitis of the right tube, abscess of liver, tubal pregnancy, typhlitis and perityphlitis.

This list does not embrace nearly all the conditions which eminent men in the profession have frankly acknowledged to have mistaken for appendicitis, or *vice versa*. The list, however, is of sufficient size to impress the important point that errors in diagnosis may occur, and that a laparotomy for

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excision of the appendix may be performed and the real pathological condition which the operation is intended to relieve be other than a diseased appendix. Finally, it is significant that in some of the cases in which the appendix has been removed during the quiescent period no change sufficient to cause trouble could be found in the appendix. Within a month I have examined a specimen showing a perforation of the cæcum where appendicitis was diagnosed. If this patient had survived the attack and the appendix had been removed the operation would have been of no avail, for the lesion was situated in the cæcum.

3. *The development of ventral hernia.*—This interesting observation has been made by Dr. Bull, whose brilliant work in abdominal surgery is of world-wide reputation and entitles his opinion to the highest respect.

This condition is not likely to follow the early incision which is made during an attack to allow pus to escape, because the incision under these circumstances is very small, whereas, in a laparotomy for excision of the appendix during the interval of attacks, the length of the incision is from four to five inches. Several cases of ventral hernia following operations for removal of the appendix have been reported. The special situation of this incision and the peculiar character of the parts divided, and the tendency of the wound to gape, render the development of hernia a most serious complication. There is no doubt that this condition can give rise to strangulation, and even if strangulation does not follow, the presence of the ventral hernia is a source of great discomfort and annoyance to a patient.

4. *The lack of conclusive evidence that the excision of the appendix is attended with permanent relief.*—Time is the crucial test to settle this important point. The cases that have been published bear witness to the fact that the operation has been performed, but the period of time is too short to base any conclusions as to the ultimate result. If the excision has been performed in a case where the appendix alone was involved, the result may be satisfactory as regards the appendix; the pathological process, however, which established the lesion in the appendix may subsequently develop in the cæcum and changes similar to the original attack may then ensue. If the appendix has been removed when the lesion is in the cæcum the relief does not follow.

To what extent the operation will afford immunity in the future is still a question *sub judice*. There is positive evidence that recurrent attacks may terminate in a final one with recovery, and the patient enjoy years of immunity. He may never have any return of the trouble. I know of one patient residing in a southern State who has had fourteen consecutive attacks of appendicitis; but during the past five years has never had the slightest indication of any disturbance. These fourteen attacks occurred during a period of a few years, and the patient was able to trace the cause of the attacks to the use of cathartics and to a peculiar diet. Since he has abandoned cathartics and has lived upon a meat and gluten diet he has never had the slightest indication of trouble. His appendix may be so situated as to never develop another attack. An attempt to excise his appendix might be attended with a fatal issue.

5. *A condition following relapsing attacks may afford immunity from danger in the future.*—I feel certain that some surgeons will dissent from this view; but I shall endeavor to prove the correctness of the statement from pathological material and from clinical data. One great mistake that surgeons commit in discussing this subject is to consider all cases of appendicitis doomed to immediate death. Investigation and observations are made at the time of a contemplated incision to avert perforation, consequently the subject is viewed from very narrow limits. I believe that often a single attack from which recovery follows places the appendix in such a position that no further harm can result to the patient. For example, I have four microscopical specimens showing that the appendix in a cross-section has become completely obliterated as a result of appendicitis, and that instead of the normal duct with its narrow lumen filled with glairy mucus an impervious cord exists. This change is the result of a previous inflammatory process, as is seen by an examination of the tissue. I know of other cases where the same condition is present. If this is true in regard to a single attack, why may not the last of recurrent attacks place the appendix in this same condition? An appendix, then, that is an impervious cord becomes so by inflammatory processes, and I fail to find a report of an autopsy where the patient died from an attack of appendicitis and in which the appendix was an impervious cord.

These cases of obliterated appendices are found incidentally, and upon microscopical examination the fact is revealed that the cords are the result of a previous attack of appendicitis. But the impervious cord is not the only condition that may afford immunity to a patient. For example, I have specimens showing some interesting conditions resulting from appendicitis. One specimen shows that the duct was embedded in a dense stratum of inflammatory new-formation behind and to the outside of the cæcum, and entirely shut off from the general peritoneal cavity. A perforation had previously taken place. A small foreign body was lodged in a circumscribed cyst cavity. In another case an

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autopsy was made upon a patient who had died suddenly from heart disease, and the appendix was found buried in a mass of areolar tissue continuous with a dense band of tissue adherent to a cicatrix upon the skin. This mass of tissue in which was embedded the appendix with a cicatrix denoting a slough was behind the cæcum and the peritoneum. Several years previous this patient had suffered from an attack of appendicitis; perforation had followed and the appendix was placed in a position never again to give rise to any trouble. The condition of perforation was not diagnosed at the time of the attack and the patient never suffered ill consequences from the new position of the appendix. I have also another specimen of an appendix which was situated behind the cæcum and adherent to it. A perforation of it would have been extra-peritoneal, and in that case the danger of a purulent peritonitis would have been avoided. I believe that exceptionally a few of these cases of abscess connected with the appendix are outside of the general peritoneal cavity; but, of course, the large majority of them are intra-peritoneal. Any attempt to excise an appendix during the quiescent period under the circumstances just mentioned would be attended with very great danger, whereas no trouble would ever arise from the condition of the parts.

I know of three cases where the appendix had become adherent to the wall of the cæcum and perforation had occurred through the adherent surfaces directly into the lumen of the cæcum. The escape of pus *per rectum* is the proof offered in these cases of typical appendicitis. The patients recovered and the appendices in their present condition of adhesion with the cæci will probably never give rise to mischief.

To recapitulate, it seems from an examination of the clinical facts and of the pathological material, and from a careful study of the reported cases of appendicitis that excision of the appendix pertains to only eleven per cent. of all the cases of appendicitis. Of these cases represented by eleven per cent. many undergo resolution, some terminate by abscess opening spontaneously or by early incision, while a few are exposed to the dangers of perforation and general peritonitis. Excision of the appendix is suggested as a preventive measure in the small percentage of cases of relapsing appendicitis in which perforation is feared. It has, however, been clearly proved by my specimens that even perforation and general peritonitis are not in all cases fatal complications.

So, then, if those cases of perforation in which recovery follows—and they are more frequent than has been supposed—are deducted from all the cases of perforation, there are left but a few concerning which the question of the propriety of excision of the appendix would arise. If, now, it is remembered that an incision on the second or third day during the attack in relapsing cases, is attended with most brilliant results, showing a mortality of only a small percentage, is it not wise to observe conservatism and decline to excise the appendix during a quiescent period, when its death-rate is higher than the death-rate of early incision upon the second day? The results which Dr. Willard Parker obtained by operating during the second week after adhesions had formed were brilliant, considering the high death-rate previous to his suggestion. The improvement upon Dr. Parker's operation by early incision upon the second or third day has left but little to be desired in the management of these cases during an attack. Are not, then, a patient's chances for life better after an incision upon the second or third day during an attack than they are after a laparotomy performed during the quiescent period, with the view of removing an appendix which may not be found, and if found cannot be safely removed. Does not such an operation expose the patient to a greater peril than the management of a future attack by early incision?

In conclusion the clinical fact must not be lost sight of that the last attack from which the patient suffered, may have placed his appendix in a position that precludes the possibility of a future attack. From a consideration of these facts it seems wise to condemn the operation of excision of the appendix during the quiescent period as routine practice. Some special reasons should exist to justify the operation—reasons that do *not* exist in the majority of cases of relapsing appendicitis. That occasionally a case may be presented in which excision of the appendix is indicated, I do not deny, but as routine practice in all cases of relapsing appendicitis it is a measure fraught with greater danger than incision and removal upon the second or even the first day of a recurring attack. If this very early incision, as suggested by Sands and practised in several cases by McBurney and others, is resorted to in these relapsing cases, the question of excision of the appendix will arise only in connection with an early attack. If relapsing cases are operated upon at the onset of the trouble the prognosis is better than in those in which later incision is employed. It is one of those operations of expediency which should never be performed, even in a case preëminently suitable, without a thorough examination of the heart, lungs, and kidneys, for under no circumstances, with organic disease, should so bold an operation be resorted to unless the patient is confronted during an attack by death itself. To excise during an interval between recurring attacks in a patient suffering from any organic disease is ex-

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posing that patient to a certainty of death, while conservatism might result in a prolongation of human life, during which time no other attack may arise. If an attack should develop, the early operation upon the first or second day in a relapsing case might offer a prospect of recovery that would be more favorable than was at first supposed. At all events, this line of practice does not expose the patient to the danger of death before he is confronted with it, and then it is not too late to expect an escape by a resort to the new and early operation of incision and excision before serious changes have developed that might place the patient's life in jeopardy.

A CLINICAL HISTORY OF TWENTY-TWO CASES OF FILARIA SANGUINIS HOMINIS,

Seen in Charleston, S. C., from 1886 to May, 1890.

BY P. G. DE SAUSSURE, M.D.,
OF CHARLESTON, S. C.

MY excuse for this paper is that it deals with a disease scarcely known eighteen years ago, and still but imperfectly understood.

Whether or not filaria have just appeared in Charleston I am not prepared to say, but the case-book of the City Hospital shows that in 1882 or '83 Dr. J. J. Edwards, then a student of medicine, together with several members of the house-staff of the hospital, looked for filaria in the blood of a chyluric patient; and that in 1884 Drs. Edwards and W. D. Bratton examined again and again the blood of a chyluric pregnant woman for filaria, but with negative results. In 1886 Dr. John Guitéras gave the subject a new start, this time with success.

The arduous duties of a large dispensary practice leave me little time and less energy with which to make original research, nevertheless at the end of this article I have set down some facts noted while studying the subject.

CASE I.—A mulatto woman aged about forty. At the time filaria were first found (1886) she was a patient of Dr. Edwards, but had sought treatment of many doctors. She was born in Charleston, S. C., lived in Augusta, Ga., five years, but removed to her birth-place and has lived there ever since. Has had for the last ten years chyluria, with vague lumbar pains, occasional diarrhœa, and during the last three years an irregular fever with chills. In 1884 or 1885 I treated her for lymphangitis of the vessels and glands of the left leg. After some weeks the inflammation seemed to settle in the popliteal space, for in that place I opened an abscess. The pus was not peculiar, but the healing process was slow. During this attack the patient was unable to follow her vocation, that of a seamstress, but before and since she has been able to work; I have lost sight of her for the last two years. This, then, was the first case in which living filaria were found, and the examination of her blood was suggested by Dr. Guitéras.

CASE II.—A patient of Dr. Edwards. A negro aged nineteen or twenty years. Born and brought up in Charleston, S. C., in the vicinity of which he has spent all of his life. He has spent two or three months of several summers at Mt. Pleasant, a summer resort for Charlestonians, just across the bay. By occupation he was a house-servant. He sought Dr. Edwards's advice for the relief of rapidly developed chylocele which the patient thought was due to traumatism. Dr. Edwards submitted to me some of the fluid drawn from the scrotum and in it I found dead filaria; two nights afterward living filaria were discovered in his blood. Drs. Edwards and Guitéras thought he then had beginning elephantiasis of the scrotum. Shortly after this a mitral regurgitant murmur and dropsy presented themselves. The murmur and ascites increased and the patient died, apparently from heart failure. No post-mortem was allowed.

CASE III.—John G. A nearly pure negro, aged sixty-five, born and brought up in Charleston, S. C., which he claims as his residence, though he has been for months at a time on a rice plantation in South Carolina, at Flat Rock, N. C., and at Newport, R. I. By occupation he is a valet and house-servant. Had perfect health up to 1882, when, following some exertion, he had lumbar pains and hæmato-chyluria, and it was for this that he sought a doctor's advice. In 1883 he came under my care and a careful examination of his urine revealed dead filaria (not then recognized as such), blood, pus and mucous corpuscles, with epithelium from bladder and kidney. A diagnosis of pyuria was made and under tonics and astringents the patient improved, the hæmato-chyluria, lumbar pains and slight diarrhœa returning at intervals, until the fall of 1884, when once more he presented himself for treatment, having then headache, a heart murmur and a swelling of the right side of his neck resembling a unilateral goitre. He again improved under treatment. In 1886, after seeing the filaria in Cases I. and II., I recognized that the objects seen in this patient's urine in 1883 were filaria, so I examined his blood, and found living filaria. In 1889 the patient was once more under treatment for dyspnœa, palpitation of the heart, and persistent headache. In April of that year ascites developed, but under digitalis and iron the patient was relieved. During this attack the patient's heart was embarrassed, but exactly what the trouble was I am unable to make out. The abnormal sounds could not be classified. For the last half year the patient has been able to go about, but any undue exertion distresses his heart and brings on an attack of hæmato-chyluria.

CASE IV.—Mulatto man aged sixty-five, by trade a carpenter, born in Charleston, S. C., which place has been his home, but he, like most of the patients reported, has from time to time lived in other parts of the State. His health was perfect up to seven years ago, when he had his first attack of hæmato-chyluria, which was preceded by lumbar pains, abdominal colic, and dysentery. His medical attendant diagnosed cholera morbus. In 1887, when he

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came under my care, his blood was examined and filaria found.

CASE V.—Allen, a negress, aged forty-two, born in South Carolina. Has lived in Charleston for the last twenty years, but is not clear as to her previous residence. By occupation a cook. Has suffered from chyluria for five years. No other trouble until three years ago, when she had back-ache, colic and slight dysentery, but did not stop working. Filaria found in the blood in 1886. She is a widow, has had several children, only one of whom is living. She does not know of what her husband or children died. Looking for some hereditary influence, I asked that her child should come to the office.

CASE VI.—Allen's son, a lad aged eighteen years, born and brought up in Charleston. Is an epileptic, but otherwise is in excellent health. No pains nor chyluria. Blood examined in 1887 and filaria found. The filaria do not seem to give this patient any trouble. Bromides control his convulsions more or less.

CASE VII.—Mr. B., thirty-three years old, born in Charleston. Is now a constable, but has followed different occupations, one of which carried him for several months to Nassau, where he had "fever" during the late war. In 1870 he had his first attack of chyluria. Between 1870 and 1880 he had a peculiar inflammation of the glands of the groin. He says his physician could do nothing with them, and that finally an abscess formed. Since 1887 with his chyluria he has lumbar pains and some dysentery. Filaria were found in 1887. He does not know if they had previously been looked for.

I think this patient is mistaken in regard to his age, which I would say is about forty-three.

CASE VIII.—Mr. Y., aged about twenty-seven, born in Charleston, S. C., where he has spent all of his life. On account of a diseased hip-joint he has never been able to do much manual labor, though he has been a great deal about the shipping. Excepting hip disease he enjoyed perfect health until four years ago, when, following a liberal meal at a picnic, he was seized with cholera morbus. From then until now he has been subject to attacks of dysentery with abdominal pains. Examined for and found filaria in 1888.

CASE IX.—White female, aged thirty-five; born and raised in Charleston, though she has visited for two or three months on various plantations in the vicinity of Charleston. She is married, and at the time of first observation in 1887 had one child. Her health was good until the latter part of her first pregnancy, when she began to suffer with chyluria and severe pains in the lumbar region. The urine was white until after labor, when it became natural and remained so until the eighth month of her second pregnancy, when the urine became white again. I saw her for the first time at this period and found chyluria and rectal tenesmus. The urine contained vesicular masses large and small, the former about one and one-half inches long by one inch broad. These vesicles were entirely new to me and I can only describe them as looking like egg albumin enclosed in a fine membrane, the whole being in color and transparency like uncoagulated albumin. Sometimes they would be arrested in the urethra and pass only after long bearing-down efforts. I examined several of the masses, for they could be handled, though soft and compressible, but I could make nothing out of them. Once I thought I had a Bilharzia ovum, but of this I am not sure. I can only say that the vesicles and what I saw in one of them under the microscope were new to me. In this patient's blood filaria were found a few hours before labor, as well as the night before. Immediately after labor none were found either in blood from the cord or in that drawn from her finger. Examination of the blood and milk on the following day was also negative and no filaria were found in the child's blood. After some weeks chyluria disappeared, but filaria were again found in the mother's blood (child's blood was always negative). Patient became disgusted with so many examinations and I lost sight of her until 1890, when once more she consulted me and I found that she had been confined again in 1889. She said that she had had no trouble during pregnancy, but this I doubt, and think she made the statement to keep my needle out of her baby, to whom I had been summoned to relieve it of dysentery. The whole family—father, mother, and three children—were examined, and I got negative results and my discharge. The child has since died under the care of another physician. The certificate of death shows entero-colitis as the cause.

This case is particularly interesting, for the discharges from the four-months-old infant were identical in appearance with those of the other patients suffering from chyluria and dysentery.

CASE X.—Mr. G., aged fifty-seven, born in Ireland, has lived in Charleston for the last 35 years. He has been a wanderer and is a "jack of all trades." Since 1875 he has been much of the time in hospital, complaining of vague pains. In 1887 he applied for relief of lymph scrotum and enlarged groin glands. Filaria found in blood glands, which were removed, but were not adult filaria.

CASE XI.—S., aged fifty-eight, born and brought up in Charleston. Present occupation that of a house-cleaner, but like most negroes, has turned his hand to everything, and I must say of him as I have of others, that he claims Charleston as his residence, but acknowledges visits to other places; for instance, he was in Savannah, Ga., for four months. He sought relief in 1888 for chyluria of several months' standing, with lumbar pains and dysentery. Filaria found, and from eye measurement I would say that they were larger than the average. This patient had, during the month preceding his coming to me, an irregular fever with chills; no enlarged glands present.

CASE XII.—J., aged fifty-five, born in South Carolina. Resided for last ten years in Charleston; before that in different parts of the State, with visits of months' duration to North Carolina and Georgia. His work at times has been loading and unloading vessels. Has had chylocele for four years. This

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rapidly growing larger, he applied for treatment in 1889. Blood examined and filaria found. On being told that an operation would have to be performed he left, and I have no further history.

CASE XIII. (Should have been reported amongst cases found in 1886.)—A negress, one hundred years old, born in Africa. Was brought over to South Carolina in a slave-ship.

With the exception of four years, she has lived in Charleston. Called to attend her in 1886 for a cold abscess, pointing just over the scapula. Her age prevented her from giving much of a history. Thinking that her birth-place gave her a right to filaria, I examined her blood and found them. She was sent to the hospital, where the abscess was opened, but nothing peculiar was noted about the pus. She has since become insane, and has been for the last three years in an asylum. The assistant physician writes, May 10th, that "she has occasional chyluria, but no glandular swellings, and, in fact, is remarkably well." Filaria were found two weeks previously.

CASE XIV.—Mr. J., aged forty-five, patient of Dr. J. L. Dawson, Jr., who gives the following history: Birth-place and residence Charleston, S. C., but has lived in Florida, Georgia, and North Carolina. Has had chyluria for years. An attack is always preceded by lumbar pains. Is married and the father of several children, all of whom are healthy. This patient's occupation for the last few years has been that of a book-keeper to a large fruit firm, and from time to time he drinks water on vessels from Cuba and the West Indies. Had chyluria before this, however. Filaria found in 1888.

CASE XV.—Mr. M., aged thirty-two, lawyer, a patient of Dr. Kinloch's; birth-place and residence Charleston, S. C. Filaria found in blood by Dr. Kinloch in 1887; subsequently in urine and blood by Dr. Guitéras. Chyluria is the only symptom that he presents.

CASE XVI.—Mrs. B., aged fifty-two; born in Germany, but has lived in Charleston, where she came direct from Germany thirty years ago. By occupation a cook. Has had chyluria for the last eight years, but no other symptoms, save lumbar pains. Filaria found in 1887. Has one child, a boy, born since her arrival in this country. The boy's blood gives negative results.

CASE XVII.—M., male, aged about sixty years; born in South Carolina. Lives now in Charleston, but has lived in different parts of the State. In good health until several months ago, when he began to have trouble with his urine, which he describes as muddy and streaked with blood. Applied for treatment of cystitis. Dr. Edwards thought that the disease might be caused by stone, but the sound gave negative results, so we determined to look for filaria, which were found in his blood in 1890. This patient complains of great muscular weakness.

CASE XVIII.—Mrs. F., aged twenty-six, a patient of Dr. Manning Simons. Born and raised in Charleston. Is married and has two children. Has had chyluria for fourteen years. Has also had irregular fever with chills, and enlargement of the lymphatics of left leg and arm. None of these have ever suppurated, and the patient is able to go about attending to all of her household duties. Filaria found in 1890.

CASE XIX.—Sallie, aged forty-five, patient of Dr. D. Ryans. Born in South Carolina, lives in Charleston now, but gives no clear history of her birth-place or residence before she came to Charleston. Gives no account of the duration of chyluria, which is her only trouble. Is married and the mother of several children. Filaria found in 1890.

CASE XX.—Frank, aged forty-five, patient of Dr. Ryans. No history, save that he was born in South Carolina and has lived in Charleston for many years. Applied for relief from chyluria, which he says he has had for years. Filaria found in 1890.

CASE XXI.—Martha R., aged forty-eight; born in South Carolina; residence for last twenty-six years, Charleston. Health good until seven months ago, when she had an attack of hæmaturia, consequent upon gravel, her physician thought. Since then she has suffered from palpitation of the heart and dyspnœa. Three weeks ago œdema of the lower extremities appeared. On May 13, 1890, presented herself for treatment. Filaria found.

CASE XXII.—Gibbes, aged sixty, born in South Carolina; residence for last thirty-six years, Charleston. Health perfect until six months ago, when he had an attack of palpitation of the heart with dyspnœa; this has grown rapidly worse for the last month. Œdema of feet and lower extremities now. Filaria found, May, 1890.

"Tabulating the cases, I find that the disease was distributed as follows: 9 colored males, 6 colored females; 5 white males, and 2 white females. Of the 22 cases 16 were in married people, all of whom had children. In over one-half of the cases filaria were searched for in children of the married, in husbands or wives, or in friends and bed-fellows of the single ones; and yet but in a single instance did I find two cases in the same house (Cases V. and VI.). In the child of Case IX. I think, if the search could have been carefully carried on, filaria would have been found.

As to the social conditions of the patients, 15 were colored, 7 white; of the latter only three can be said to be in high life. All of the others, black and white, belong to the lower and middle classes. Why this difference? Is it from abode or diet? The houses of our domestics and laborers are very similar to those of the same classes elsewhere.

In reference to the diet and water, the former is that of the working-class in other cities, only that here they eat a great deal of fresh fish—in fact, during the summer months fish of some sort takes the place of meat. As to the drinking-water, I differ absolutely from Dr. Guitéras, for he considers it mainly cistern, and I know from a ten-years' practice amongst the lower classes that it is mainly

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pump or artesian, and exceptionally cistern water. Sometimes, for a short period just after rain-storms, the poor have barrel water, but the supply soon runs out, and they go back to the pumps and artesian wells. A word about the barrel water, which is rain-water caught in barrels and casks open to dust and dirt, and one can always find with the microscope many living things in the water. The same is true of the artesian water, which, though it comes from wells 1800 to 1900 feet deep, is, before being served, stored in an open reservoir, which, to the best of my knowledge and belief, is bricked halfway down the sides, but only puddled at the bottom. I am not enough of a microscopist to say to what class the animals found belong, but know this, that with the microscope I have spent hours seeing them fight and destroy each other. The better class of Charlestonians drink cistern water. As to mosquitoes, I think they are as common in the homes of the rich as in those of the poor.

Diagnosis of the disease can alone be made with the microscope, for by reference to the table attached to this paper we find that chylocele, chyluria, lymph-legs, and glandular enlargements are frequently found, yet examinations of the blood may fail to show filaria. Again, we find filaria without any of these disturbances (Cases VI., VII., X., XXI., and XXII.).

There is no pathognomonic symptom. Sometimes we have fever and chills, at other times neither. The disease, as a rule, does not appear to prevent the patients from working. Cases II. and III. are exceptions, and some of the other patients were for a time disabled, but returned to their duties, and the filaria were still found when looked for. The chyluria is intermittent, and in no case that I have seen was it always present; and I would state further, that during its presence a given specimen of blood would not show more filaria than another specimen examined when chyluria was absent. In but two cases have I ever failed to find filaria after having once seen them (Cases VIII. and IX.). In Case III. his residence for three months at Flat Rock, N. C. (at an elevation of 2000 feet above the sea-level), always reduced the number of filaria, but after being in Charleston for eight months they became numerous again. Would they entirely disappear if he remained in the mountains?

To show the impossibility of making a diagnosis without the microscope, I would state that during the last three years I have examined three cases of chylocele with negative results (blood of two, fluid of one). Six cases of chyluria and one of hæmatochyluria have also given negative results, though one of these may yet prove to be a case of filaria, for it occurs in a patient who is a printer, and as yet I have not been able to examine him at the end of his work, which is about 5 A.M. Five cases of elephantiasis of the leg have been under observation, but no filaria were found.

Learning from our veterinary surgeon, Dr. Benjamin McGinnis, Jr., that filaria were very common in the dogs of Charleston, with his and Mr. L. W. Bacaise's assistance I made some observations on the disease in the dog, and I found that the embryo filaria in man and dog are identical—those of the man being possibly a little larger and their movement more active and strong. Very early in the investigation I was surprised to find that in the dog the embryo filaria could be found at any time of the day or night. In man it is different for I have been able to find them in the day but twice, once at 10 A.M. in the negress from Africa (Case XIII.), and once at 5 P.M. (summer) in John G. (Case III.)

Carrying the investigation still further, I examined fleas from filarial dogs, but got negative results until the morning of May 14th, when I found two filaria in the body of a flea which was taken from a diseased dog. This observation will, I hope, be confirmed, for it may throw considerable light on the mode of infection. I had purposed to make some examinations on the puppies of an infected bitch, but time has been wanting. I therefore would suggest that anyone interested in the subject may, by such examinations, clear up the question of heredity.

In the dog the disease causes death from ascites, which seems to be in consequence of the adult filaria collecting in the heart, a condition that we found in five post-mortems.

It is worthy of remark that in the one case of death occurring in a patient known to be afflicted with filaria, the cause of death was "dropsy with heart failure"—no post-mortem was allowed, so the presence of the adult filaria in the heart was not proven. It is suspicious that Cases II., III., XXI., XXII., should have heart murmur and dropsy.[1]

A REPORT OF TWO CASES OF STRICTURE OF THE URETHRA AND CHRONIC PROSTATITIS PRESENTING INTERESTING REFLEX SYMPTOMS.[2]

BY THOMAS R. NEILSON, M.D.,

INSTRUCTOR IN GENITO-URINARY DISEASES IN THE UNIVERSITY OF PENNSYLVANIA, SURGEON TO THE EPISCOPAL HOSPITAL AND TO ST. CHRISTOPHER'S HOSPITAL FOR CHILDREN, ETC., PHILADELPHIA.

THE two cases which I have the pleasure of reporting in this paper have seemed to me to possess sufficient interest to warrant their being recorded,

[1] I would beg to return to Dr. Louis R. Staudenmayer, of Charleston, my thanks for his help in making microscopic examinations and preparing this paper.

[2] Read before the Philadelphia County Medical Society, May 28, 1890.

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because of the marked and peculiar symptoms associated with the disease of the urinary outlet present in each.

CASE I.—Mr. ——, a well-developed, athletic young gentleman, twenty-four years of age, came to my office in December last, giving me the following history: About a year previously he had had what seems to have been an attack of subacute urethritis, following an exposure. For this he used, by advice, a strong solution of sulphate of zinc as an injection, with the result of aggravating the symptoms to a considerable degree. Later in the attack a catheter, which entered the canal with great difficulty, was passed, and again the symptoms were for a time increased. Gradually the discharge and other symptoms subsided, but never entirely disappeared. At the time of his first visit to me he complained of frequently recurring attacks of scalding on micturition, accompanied with a purulent or muco-purulent discharge, worse after defæcation, and with an annoying itching just within the meatus. At times this itching was felt over the glans penis, the scrotum, and in both groins. In addition, a sharp pain, neuralgic in character, was felt just below the umbilicus, coming at irregular intervals, lasting for a few moments, and then suddenly disappearing. Simultaneously with the occurrence of this pain, a tickling sensation in the throat was felt, and a short, laryngeal cough was provoked.

The patient had observed that friction over the umbilical region, such as that occasioned by using a towel after bathing, would aggravate the itching in the anterior portion of the urethra when it was present, or produce it when it was not noticed. In addition to the urethral trouble, the patient suffered slightly from internal hæmorrhoids, and when these were congested, during constipation, the itching in the urethra was slightly increased.

Upon examination, I found the circumference of the penis to be three and three-quarters inches, the meatus very small, only 12 (F.) calibre, and the anterior portion of the urethra excessively sensitive to the small-sized rubber bougie which could be introduced into the orifice.

The first step in the treatment consisted in the division of the meatus, so that it would easily admit a No. 34 sound. Being then able to further explore the urethra, I discovered a stricture of 26 calibre at two and three-quarter inches from the meatus, and a gleety condition in the bulbous portion. The whole canal, especially the posterior portion, was extremely tender, and a characteristic prostatic discharge was brought out on the shoulder of the bulbous explorer. Subsequent treatment consisted in passing at regular intervals full-sized steel sounds, the use of hot sitz baths, and the local employment of a sedative and astringent lotion for the itching of the scrotum and groins. After the sounds had been passed a few times the tenderness of the urethra disappeared, micturition was of course much improved (owing to the enlargement of the constricted meatus), the itching sensation in the urethra was no longer observed, and the pain near the umbilicus and the tickling in the throat ceased. It is interesting to note that at first, during the employment of the sounds, the latter symptoms were always aggravated for a short time after each visit.

By the first of April the patient considered himself well, but a little later, after taking a heavy cold and being indiscreet in his diet, the prostatic trouble was excited again, being manifested by a mucous discharge from the urethra while at stool, and a return of the itching near the meatus, but less intense than formerly. Under treatment this condition has again subsided, and the patient is now practically well.

CASE II.—Mr. ——, also a private patient, a gentleman twenty-three years of age, having the history of an attack of gonorrhœa, complicated by prostato-cystitis, three years before he first consulted me, which was at the beginning of this year. The symptoms present were a slight gleety discharge, and burning pain on micturition and occasionally during the intervals. Whenever this pain was present there was also felt a similar pain on the inner border of the left foot near the first metatarso-phalangeal joint, and extending to the ball of the great toe. Friction of the glans penis by contact with the clothing produced the painful sensation, both in the urethra and in the foot; and, conversely, rubbing the foot upon a carpet or rug, or warming it before a fire, would excite the sensation in the urethra.

Examination showed: Circumference of penis three and a half inches, a stricture of 24 calibre at two and a half inches, and a highly sensitive condition of the urethra, most marked in the posterior portion, from which the discharge of chronic prostatitis was obtained by the explorer. I advised internal urethrotomy for the stricture, but my patient would not consent, preferring to trust to the less certain method of gradual dilatation. Prescribing a mixture of the bromide of potassium, tincture of hyoscyamus, and camphor water, for the purpose of reducing the abnormal sensitiveness of the urethra, I began the treatment with sounds, and, as the condition of the urethra improved, the painful sensations, both in that canal and in the foot, became less frequent and less intense, and had nearly disappeared when an attack of illness necessitated the discontinuance of the treatment. After recovering from this attack my patient left the city, by the advice of his physician, and on his return, recently, tells me that he again has his old sensations, and has decided to submit to the operation of internal urethrotomy.

REMARKS.—The existence of pain or other morbid sensation in association with or arising from stricture of the urethra, cannot, of course, be considered exceptional. All authorities upon the subject of stricture mention among its symptoms (exclusive of those at the seat of the lesion or lesions) pain in the perineum, the hypogastrium (when cystitis is present), the small of the back, the loins, the testes and groins, and sometimes extending down the thighs. Sensory disturbances at more remote situations are certainly exceptional.

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A case similar to the second here reported was described by Sir Benjamin Brodie, in his "Lectures Illustrative of Certain Nervous Affections" (*Dunglison's American Medical Library:* "Medical and Surgical Monographs," Phila., 1838, p. 38). The case was that of a gentleman who consulted him on account of a pain in the instep, so severe as to make him lame. Incidentally, the existence of a stricture was discovered, and its dilatation was followed by the relief of the pain.

I have not been able to find any reference to a case resembling the first one of this paper, certainly not so far as the throat symptoms are concerned.

MEDICAL PROGRESS.

Quinine and Sulphur in the Treatment of Diphtheria.—According to the *Provincial Medical Journal*, DR. BURGHARDT employs equal parts of quinine and flowers of sulphur in the local treatment of diphtheria. The powder is blown upon the false membrane, after which, if the disease is in the pharynx, the patient is not permitted to swallow anything for an hour and a half. As a prophylactic measure the powder is also insufflated into the nasal cavities, even when these parts are not infected. Of the thirty three cases treated in this manner by Burghardt all recovered, and in none was the powder applied oftener than twice daily. Internally he prescribed the tincture of the chloride of iron. In addition, the patients were bathed with vinegar, and were given wine, brandy, and milk.

Therapeutics of Green Coffee.—DR. LAUDARABILCO recommends an infusion of green coffee in the treatment of gout, gravel, nephritic colic, and migraine (*Journal de Médicine de Paris*). The following varieties of coffee are used: Martinique, one-half; Mocha and Bourbon, of each, one-fourth. At night six drachms of the mixture are placed in a glass of water and macerated about twelve hours. The contents are then stirred and strained, and the clear liquid drunk without sugar, and while the stomach is empty. Food may be taken soon after. The results are said to be extremely good.—*Provincial Medical Journal*, June, 1890.

Thallin in Typhoid Fever.—DR. FRANZ SCHMID has published an inaugural dissertation on the treatment of typhoid fever with thallin, his observations being made upon twenty-five cases. The drug was administered in doses varying from ¼ grain to 3 grains every hour. The author draws the following conclusions:

1. In the above-mentioned doses thallin has an excellent antipyretic action in typhoid fever of moderate severity. In severe cases it is not very effective. In the former cases it has a good effect on cerebral symptoms.

2. The drug does not cause collapse nor renal irritation, and it is without disagreeable effects on the heart and lungs.

3. It seems to reduce the mortality of typhoid fever, but has no appreciable effect upon the duration of the disease.

4. The thallin treatment is of as much value as the hydropathic treatment, and is, of course, less annoying to the patient.

In the *Correspondenzblatt für Schweizer Aerzte*, No. 9, 1890, Ruetimeyer writes that he has never seen collapse following the use of thallin, even when given in much larger doses than those of Schmid, and that even in severe forms of the disease it has a good effect on cerebral symptoms.—*Provincial Medical Journal*, June 2, 1890.

Prescription for Eczema in Children.—The following prescriptions for eczema in children are quoted in the *Annals of Gynecology and Pædiatry:*

1. ℞.—Bismuth subnitrate . 4 drachms.
   Zinc oxide . . . 1 drachm.
   Carbolic acid . . ½ drachm.
   White vaseline . . 2 ounces.—M.

2. ℞.—Bismuth subnitrate . 2 drachms.
   Zinc oxide . . . ½ drachm.
   Glycerin . . . 1½ drachm.
   Carbolic acid . . 20 minims.
   White vaseline . . 6 drachms.—M.

The latter is a very elegant and soothing ointment.

If there is much stinging and irritation the following lotion will be found valuable:

℞.—Bismuth subnitrate . 1 drachm.
Glycerin . . . 4 drachms.
Carbolic acid . . 12 minims.
Rose-water to make . 1 ounce.—M.

Shake, and apply with a soft brush.

Cancer of the Pancreas; Extirpation; Recovery.—A successful extirpation of a primary cancer of the pancreas is reported by PROFESSOR RUGGE, of Bologna (*Medicinische-chirurgische Rundschau*, April 15, 1890). The patient, a woman of fifty years, came to Rugge's clinic in August, 1889, complaining of constant gastric pain, anorexia, and obstinate constipation. The pain began in the epigastrium, spreading from there to other parts of the abdomen. Physical examination revealed a tumor in the neighborhood of the transverse colon in the left hypochondrium and surrounding the umbilicus. The tumor was rather irregular in shape, felt firm on pressure, and measured about ten inches in length and four inches in width. The author made the diagnosis of probable retro-peritoneal sarcoma.

The patient insisting on the removal of the tumor, operation was undertaken on September 4th. The removal was rendered extremely difficult by the softness and fragility of the growth and numerous adhesions. Finally, extirpation was accomplished and the growth was found to be the pathologically changed pancreas, which the microscope proved was carcinomatous.

Healing of the wound was most rapid, and the general condition of the patient improved from day to day, and notwithstanding the fact that she desired and received a mixed diet, digestive disturbances diminished and finally disappeared. The author thinks that this remarkable case shows that after total extirpation of the pancreas other glands perform its functions, particularly Brunner's glands and Lieberkühn's follicles.

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SATURDAY, JUNE 28, 1890.

CODEIN.

ACCORDING to LOEWENMEYER (*Deutsche medicinische Wochenschrift*, No. 20, 1890), codein is very little employed in Germany, notwithstanding the encomiums which it receives from physicians elsewhere and especially from the French.

He therefore recently instituted an extensive series of observations in Jacobson's service at the Jewish Hospital in Berlin. Some five thousand doses of the drug were given to about four hundred patients, some of whom took it for weeks, and others for months; yet in no case did he observe any untoward results. He therefore recommends its use in place of morphine, rating it as a narcotic of somewhat lesser intensity than the latter, but on the whole superior, because of its freedom from danger. He especially endorses Dr. Lauder Brunton's assertion of the peculiar applicability of codein to the relief of painful affections of the abdomen. Gastralgia, colic, and the various visceral neuralgias seemed peculiarly amenable to its influence. The patients had long periods of respite from pain. They found sleep, and when, after a certain time, new exacerbations occurred, the medicament in the same dose as at first still exerted the same favorable influence.

Far more important than the relief of functional disturbance, however, in which the psychic factor may be presumed to have more or less influence, is the possibility of relieving the pain dependent upon organic disease, gastric cancer, cancer of the liver, cancer of the intestine, etc. While morphine was effective in ninety out of one hundred cases of this nature, codein succeeded in only sixty.

The question as to the indications for one or the other of these drugs is quite difficult to answer. Excluding idiosyncrasies, Loewenmeyer is disposed to think that attacks of pain of great intensity, occurring in paroxysms, are not likely to be favorably influenced by codein, but are alleviated by morphine. This was particularly noticeable in hepatic colic and in renal colic. He would also consider it a mistake to administer codein in cases of gout or of circumscribed inflammation of the peritoneum, in which large doses of opium act so happily in preventing extension of the inflammatory process. After the acute symptoms have subsided, however, codein is useful in controlling the remaining pains.

Incomparably more favorable than in any affection heretofore mentioned, is the action of codein in diseases of the thoracic viscera, and particularly of the organs of respiration. This was especially notable in cases of phthisis, alike for its influence upon the cough, for relief of pain, and for modifying acute bronchitic or pneumonitic exacerbations. Good results were likewise evident in some cases of bronchial asthma. The drug was also administered in some cases of severe cardiac lesions in which morphine had previously been employed, and without seeming to produce any toxic effect. On the other hand, it was of little avail either in organic or functional nervous affections. As a hypnotic, however, it acted readily, nor did it seem to have a tendency to produce an unfortunate habit, such as follows the continued use of morphine.

While Loewenmeyer cannot agree with the opinion that codein is useful in the direct treatment of the morphine habit, he looks upon it as a prophylactic, inasmuch as by its substitution for morphine the contraction of the habit may be avoided.

We have called attention to this careful study of an important drug, because we believe that in America, too, its use might be profitably increased. Our experience tallies closely with that of Loewenmeyer so far as reported—an important omission in the report being its use in diabetes mellitus—and the concluding observation of that author is one to which great heed should be given. Many unfortunate cases of morphine habit have been due to un-

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guarded prescription of the drug, or too long continued resort to it, by physicians. It is much easier to avert contraction of the habit than to cure it. Therefore, if codein be applicable at all in cases where an opium alkaloid is indicated for anything more than occasional use, it should be preferred. We are inclined to go still further than Loewenmeyer and to urge caution and reluctance in the use even of codein for prolonged periods. Let continuous resort to any drug of this nature be only adopted after careful deliberation, as an absolute necessity, and with the safeguard, to both patient and physician, of a consultation.

CORRESPONDENCE.

FIVE CASES OF PTOMAINE POISONING.

To the Editor of THE MEDICAL NEWS,

SIR: I take the liberty of presenting these cases, which to me were of considerable interest, to my colleagues in the medical profession for their consideration. I think that the report may perhaps assist us in finding the etiology of some of those most serious and painful conditions which we so often meet with, and where the cause is somewhat obscure.

I had been practising for some time in the mining regions near Charleston, S. C., a dangerously malarial section, and while there had seen some of the most desperate and malignant forms of malarial affections, such as malignant malarial dysenteries, paralyses, and congestions, and so was not in a condition to be surprised by anything I met with. However, on Monday, in the latter part of April, 1890, I met with a series of five cases which specially attracted my attention after the death of two of them. On the previous Friday evening there had been a beef and a hog killed, the meat of which was sold in the local market on Saturday; it had not been kept on ice, but the weather was pleasant, not hot. My patients ate some of this meat Saturday afternoon and again on Sunday morning—four women and one man. One of the women at about eleven o'clock Sunday morning was taken with apparently a violent attack of cholera morbus, in which condition she remained until I saw her early on Monday morning. Another of the women was attacked in the same way at about 1 o'clock Monday afternoon; she had eaten some of the pork. The other three were attacked in a similar way during Monday.

The meat had appeared to be perfectly fresh and very nice, so that when I inquired as to whether they had eaten anything which might have caused the trouble, they did not mention the meat. The first two women I found in the following condition: Lying with the knees drawn up and suffering great pain, paroxysmal in character, abdomen distended, tympanitic and painful on pressure, countenance anxious, great nervous excitement, temperature 101°, pulse rapid, bowels constipated, no history of a chill or any previous debility. I considered this condition as cholera morbus, although there had been but one slight attack of vomiting and no purging, so I gave a large enema of warm water and soap, thinking that I would clear the bowels of the irritating substance. The enema acted well and brought away large quantities of fæcal matter. I then gave a hypodermic injection of one-half grain of morphine, ordered hot stupes to be applied over the abdomen constantly, and one-quarter grain of morphine to be given every three hours until relieved.

On calling next morning I found that my patients had had little or no relief, and that a dysenteric discharge had set in, temperature 102°, pulse rapid and compressible. Thinking this to be dysentery following cholera morbus I gave ipecacuanha, opium, and bismuth-subnitrate; also quinine, five grains, three times a day. But the condition continued to grow worse and by night my patients were in collapse, and died the next morning (Wednesday).

Of the other three, the man recovered on the above-mentioned treatment, although he went through a troublesome and severe attack of dysentery. On Tuesday it was suggested to me that perhaps the meat was the cause of the trouble, and the idea struck me as being a likely one and suggested ptomaines. I immediately put the other two women on the following treatment: To one, after washing out the lower bowel with solution of bichloride of mercury 1:3000, I gave bichloride of mercury one-sixteenth grain every four hours; she recovered rapidly. To the other I gave tincture of chloride of iron, 20 drops every four hours, also an enema of the bichloride of mercury solution; she recovered, but slowly.

On examining into the histories of these cases I found that all of them had eaten either the pork or the beef. The man's case was milder than the others, which fact, I think, was due to the beef eaten by him having been parboiled before being roasted, which he states was the case. I have also been informed that numbers of others had dysentery after eating meat, on several occasions previous to this. Finding that a considerable amount of distemper existed among the hogs, cows, and horses, I concluded that perhaps, the animals being in an unhealthy condition, putrefactive changes set in rapidly, and, although being only incipient—for the meat seemed fresh—ptomaines were formed, and that my patients were suffering from poisoning from this product.

Now in the section where I have been practising for a year fresh meat could only be had once a week—on Saturday—and I found, on looking over my cases of dysentery for the year—and a great number of them there were—that most of them were in the spring and summer, and that frequently fresh meat had been eaten a day or so before, and that when such was the case the onset of the disease was similar to that of the above-mentioned cases, varying in severity, due sometimes to the mode of cooking and again to the quantity eaten; although there were not many deaths, I must confess my treatment of that disease with ipecacuanha, etc., was not satisfactory.

The theory I wish to endorse is that as dysentery, cholera morbus, cholera infantum, etc., are most common in the summer months, in hot and filthy quarters, and in the tropics, and that as the summer months and warm climates are the conditions most apt to convert albuminoid substances into ptomaines, may not ptomaines,

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more frequently than we generally suppose, be the cause of these affections? And that, if such be the case, could not a more satisfactory treatment than the present be formulated? There was a condition in my cases which I failed to make much mention of above, which, I think, goes to strengthen the ptomaine theory. It was the great nervous excitement, which appeared to me to be due to the absorption into the blood of a virulent septic poison; for the local intestinal conditions I did not consider severe enough to cause it; also the collapse I considered due to this cause.

I did not make an autopsy of either of these bodies or examine the discharges chemically, but I feel convinced that they were cases of ptomaine poisoning, and that the above-mentioned diseases are frequently caused by this product.

W. MAZYCK MEMMINGER, M.D.
CHARLESTON, S. C.

NEWS ITEMS.

THE next meeting of the Fifth District Branch of the New York State Medical Association will be the eighth special meeting, to be held in Kingston, Ulster county, New York, on Tuesday, July 22, 1890. A large attendance is desired.

THE 17th annual session of the Mississippi Valley Medical Association will be held at Louisville, Kentucky, October 8, 9, and 10, 1890. The medical profession is respectfully invited to attend. The meeting promises to be of great social and scientific interest, as the profession of Louisville are doing their utmost to make it a success. Ladies accompanying physicians will be made especially welcome. Gentlemen wishing to read papers will please send titles as soon as possible to the secretary, Dr. E. S. McKee, 57 W. Seventh street, Cincinnati. The American Rhinological Association will also meet in Louisville October 6, 7, and 8, 1890.

A Medical Bishop.—The Right Reverend Henry Callaway, Bishop of Saint John's, Caffraria, South Africa, who died March 26th, was a regularly qualified practitioner of medicine and surgery, his M.D. degree having been granted by the King's College, Aberdeen, in 1853. He was in his seventy-third year at the time of his decease.

Dr. Virchow has recently been on a brief visit to Hissarlik, where his old friend Schliemann is still engaged in explorations. On his return, while passing through Constantinople, he was made the recipient of marked attentions by the Medical Society of that city. He addressed the Society in response to remarks by the President, Dr. Stekulis, saying that there was a manifest and happy awakening in many parts of the Orient, of which he himself had been a witness, and the scientific world was destined to be the gainer by the contributions of countries that had hitherto been receivers only, and giving out nothing of value.

Professor Nussbaum Pensioned.—Dr. von Nussbaum, it is announced, will be awarded a pension by his government in consideration of his distinguished services in surgery. He has been invalided on account of a severe attack of influenza, about six months ago, which has left him partially paralyzed and nearly blind.

THE University of Halle now has its Hygienic Institute, with suitable lecture-hall and laboratories. Professor Renk has been appointed to be its director.

Obituary.—The death of Dr. Francesco Scalzi, at Rome, is the subject of memorial mention in the *British Medical Journal.* Professor Scalzi was the most eminent authority in materia medica, in Italy, of his generation. He established, in 1876, the first and the best, in Italy, Institute for Experimental Pharmacology and Toxicology. He was a distinguished lecturer and teacher, an editor, the writer of 112 publications on various subjects, a hospital physician, a sanitarian, and a public official. He was fluent, eloquent, fertile, and withal blessed with a sound judgment. He was in his 70th year.

Large Russian Surgical Fees.—Dr. Sklifissowsky, of Moscow, having been called to Odessa to operate upon a case of hip-disease, was presented with an honorarium of 11,000 roubles, or the value of £1,222. This is, for Russia, an enormous fee, and the surgeon, with remarkable generosity, passed it over untouched to the University of Odessa, to found a medical scholarship. He also was called upon, incidentally to his other consultations, to operate upon a cancer of the breast, for which he received 2000 roubles. These large fees are for the elect only, the average Russian medical man being very poorly paid.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 17 TO JUNE 23, 1890.

By direction of the Secretary of War, leave of absence for six months, to take effect when, in the opinion of his department commander, his services can be spared, is granted WILLIAM O. OWEN, JR., *Captain and Assistant Surgeon.*—Par. 12, *S. O. 139, A. G. O.*, June 14, 1890.

By direction of the Secretary of War, EUGENE L. SWIFT, *First Lieutenant and Assistant Surgeon,* is relieved from duty at Fort Spokane, Washington, and will report in person to the commanding officer at Fort McDowell, Arizona, for duty at that station, relieving Marlborough C. Wyeth, Captain and Assistant Surgeon, who, on being thus relieved, will proceed to Fort McIntosh, Texas, and report in person to the commanding officer thereof for duty at that station. The officers named will also report by letter, upon their arrival at their new stations, to their respective department commanders.—Par. 10, *S. O. 140, A. G. O.*, June 16, 1890.

By direction of the Secretary of War, leave of absence for two months, to take effect July 1, 1890, is granted CHARLES B. BYRNE, *Captain and Assistant Surgeon.*—Par. 13, *S. O. 141, Headquarters of the Army, A. G. O.*, June 17, 1890.

By direction of the Secretary of War, leave of absence for four months, to take effect upon the final abandonment of Fort Maginnis, Mont., is granted to WILLIAM W. GRAY, *Captain and Assistant Surgeon.*—Par. 14, *S. O. 141, Headquarters of the Army, A. G. O.*, June 17, 1890.

By direction of the Secretary of War, SAMUEL M. HORTON, *Major and Surgeon,* will visit the encampment of the Maine Volunteer Militia, at Augusta, Maine, during the period of its encampment, June 30 to July 4, 1890, inclusive, for the purpose of instructing the medical department thereof in its duties in camp, and on the completion of this duty will return to his proper station.—Par. 5, *S. O. 143, Adjutant-General's Office, Washington, D. C.*, June 19, 1890.

TAYLOR, MARCUS E., *Captain and Assistant Surgeon.*—Is hereby granted leave of absence for one month, on surgeon's certificate of disability, with permision to go beyond the limits of this Division, and to apply for an extension of five months.—Par. 1, *S. O. 45, Division of the Pacific, San Francisco, Cal.*, June 13, 1890.

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An Open Letter to the Medical Profession

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[Reprint from Editorial in April number, 1890, of the Virginia Medical Monthly.]

Hunter McGuire, M. D., LL. D., etc., formerly Professor of Surgery in the Medical College of Virginia, Ex-President of the Southern Surgical and Gynæcological Association, etc., in a recent conversation with us on the subject of Mineral Springs Waters, made special mention of the use of Buffalo Lithia Water after cases of laparotomy and other surgical operations. Feeling assured that his views on this subject would be of interest to the Profession generally, we requested a statement of his opinion, and obtained his permission to quote him as follows:

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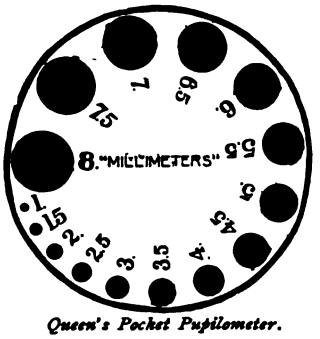

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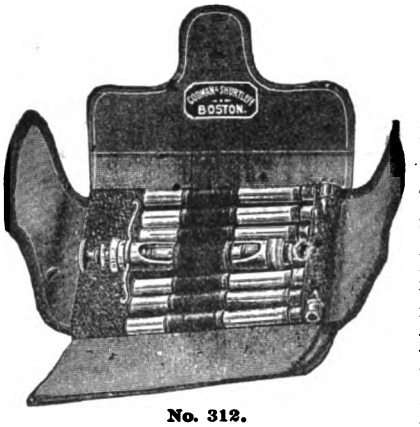

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INTEREST INCOME, nearly Five Per Cent. on Average Net Assets.
NEW INSURANCE WRITTEN, over One Hundred and Fifty-one Million Dollars.
ASSETS, over One Hundred and Five Million Dollars.
SURPLUS, by the New York State Standard, over Fifteen and a Half Million Dollars.
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PROGRESS IN 1889.

INCREASE IN INTEREST	$ 303,653 06
INCREASE IN BENEFITS TO POLICY HOLDERS	1,148,051 61
INCREASE IN SURPLUS FOR DIVIDENDS	1,716,849 01
INCREASE IN PREMIUMS	3,458,330 35
INCREASE IN TOTAL INCOME	3,761,983 41
INCREASE IN ASSETS	11,573,414 41
INCREASE IN INSURANCE WRITTEN	26,099,357 00
INCREASE IN INSURANCE IN FORCE	75,715,465 00

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1880	$ 198,000
1881	242,500
1882	316,800
1883	401,500
1884	470,200
1885	596,900
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"The American System of Obstetrics" is most admirable, containing the best work of our very best men.

From PAUL F. MUNDÉ, M. D.,
Professor of Gynecology in the New York Polyclinic; Gynecologist to the Mount Sinai Hospital.

It gives me much pleasure to say that after a careful perusal, I find it a work of exceptional excellence which reflects great credit on American medicine, and particularly on American gynecologists. It is a real treat to read a book so carefully and instructively written, so elegantly appointed, and so thoroughly discussing the various subjects which it contains. No American physician need fear to place it on a par with the best work of foreign authors.

From FORDYCE BARKER, M. D., LL. D.,
Professor of Clinical Midwifery and Diseases of Women in the Bellevue Hospital Medical College, New York.

I regard the work as very valuable, by far the most so of any on the subjects of which it treats which have appeared from the American press and I think that I may safely add, from any nationality. I am particularly proud of it as a work by American authors.

From SAMUEL C. BUSEY, M. D.,
Fellow American Gynecological Society, etc.

The editor and publishers are to be congratulated on the issue of such a comprehensive and valuable work as Hirst's American System of Obstetrics.

PRESS OPINIONS.

From the Medical News, August 25, 1888.

This, the companion volume to the "System of Gynecology by American Authors," equals it in the excellence of the subject matter and the perfection of the publishers' art. As a treatise for the use of the practitioner the volume will be found to represent admirably the obstetric science of the day, as exemplified in American practice.

From the Boston Medical and Surgical Journal, January 3, 1889.

The same qualities which were characteristic of the first volume are conspicuous here: the thoroughly practical way in which the various subjects are treated, a wide knowledge and fair appreciation of what has been done in foreign countries, and withal a distinctive American independence of thought and flavor of originality about the whole.

From the American Journal of the Medical Sciences, March, 1889.

Gynecology for all peoples and times has been enriched by the material gathered together in the two volumes that compose the work. It is a good work from the hands of good and earnest men, and as such it will endure and keep its place.

From the Obstetric Gazette, August, 1888.

This is a very valuable contribution to the literature of Obstetrics. The editors, contributors and publishers are entitled to most hearty congratulations for the complete kind of work that has appeared.

From the Journal of the American Medical Association, September 8, 1888.

One is at a loss to know what to say for fear that just and merited praise may be mistaken for flattery. The papers of Drs. Engelmann, Martin, Hirst, Jaggard and Reeve are incomparably beyond anything that can be found in obstetrical works.

From the University Medical Magazine, November, 1888.

In substance it is practical. American obstetricians are the most successful whether performing craniotomy with pocket scissors, miles from an assistant, or performing Cæsarian section in a hospital in the metropolis with the most approved technique. Among the most encouraging signs of the present is the determination on the part of intelligent men to know the science of the world, and this places at our disposal the clinical treasures of the older continents.

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The remedies commended for these affections are manifold, and must necessarily vary with the individual conditions. Simplicity of medicinal treatment in these cases is, we believe, practiced by the most intelligent physicians. As easily available, eligible and convenient remedies, when other than dietetic or hygienic measures are desirable, we may mention the following, supplied by us, which have proved efficient in the experience of many physicians:

Chloranodyne, a preparation of much value as a sedative, anodyne and antispasmodic in disturbances of the digestive tract incident to summer. The formula is an improvement upon the chlorodyne of J. Collis Browne, M.R.C.S.L., which has long been established in favor abroad.

Among intestinal sedatives tablets of bismuth subcarbonate and subnitrate, antacid tablets, soda-mint tablets, Dover powder tablets, pepsin and bismuth tablets, arsenite of copper tablets, and pepsinum purum tablets or pepsin cordial when diarrhœa is dependent on fermentation of undigested food, offer a choice for selection to meet the varying indications present.

Our pepsin cordial presents the ferment in an especially desirable form for administration, being permanent and palatable, as well as possessing in a high degree the proteolytic properties of the gastric juice.

The antiseptic and sedative treatment of intestinal disorders is a deservedly popular one, and in this class of remedies we would remind physicians of the antiseptic yellow oxide of mercury tablets which have proved of so much service in septic forms of dyspepsia, and prophylactic against diarrhoea and dysentery.

For local use mercuric iodide tablets will be found convenient for making solutions of any desired strength, and for purposes of disinfection of excretions, or surroundings, antiseptic liquid or thiocamph may be employed to advantage.

There is another class of remedies, to which we wish to ask especial attention, of much service in inducing emesis in children or adults in which overloading of the stomach or intestines leads to diarrhoea. A most reliable and certain emetic for this condition is normal liquid ipecac (standard two-per-cent. emetine). This is available also in croup incident to the exposure of children to sudden changes of temperature and the out-door life of summer.

For use as an expectorant for coughs and colds, two recent remedies are being largely employed, viz.: cocillana and Goanese ipecac.

Information as to any of these remedies in the form of descriptive circulars and samples for testing when desired, will be furnished to physicians on request.

PARKE, DAVIS & CO.,

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